Housing Growth Options Report
Belfast City Population and Housing Growth Study

October 2016

Turley

Contents

Executive Summary

1. This study has been prepared to consider the future population and housing growth of Belfast, with a reasonable range of potential population and household growth scenarios presented for the administrative area covered by Belfast City Council (BCC). The potential growth scenarios have been subjected to review and evaluation in order to arrive at a recommended position on a reasonable level of population and household growth to be planned for over the period from 2014 to 2035, having regard to the historic demographic, market and economic context of the city.

2. It is understood that the recommendations of this report will be considered by BCC in the development of policies relating to the provision of housing within the emerging Belfast Local Development Plan (LDP). It is important to recognise that this report is limited to presenting an evidence-based consideration of housing need and demand drivers and does not represent policy.

Future Growth Scenarios

3. Three potential growth scenarios have been developed by Edge Analytics using the POPGROUP suite of software, namely:

    *   **Scenario 1 – Adjusted Demographic Growth** – a demographic trend-based scenario based on trends recorded over the past two years (2012 – 2014), which exceed the scale of growth implied by longer term historic trends but are considered to capture positive and improving demographic trends in the city, including a declining net outflow of residents and a continued growth in employment;

    *   **Scenario 2 – Supporting Baseline Employment Growth** – illustrating the scale of population and labour-force growth that may be necessary to support baseline levels of employment growth forecast by Ulster University (UU), based on prudent assumptions on labour-force behaviour; and

    *   **Scenario 3 – Supporting Higher Employment Growth** – as above, based on higher levels of employment growth forecast by UU.

4. Variant levels of population, housing and employment growth are associated with each of these scenarios, with the key differences over the full plan period (2014 – 2035) summarised in the following table.

Figure 1.1: Summary of Scenario Implications 2014 – 2035

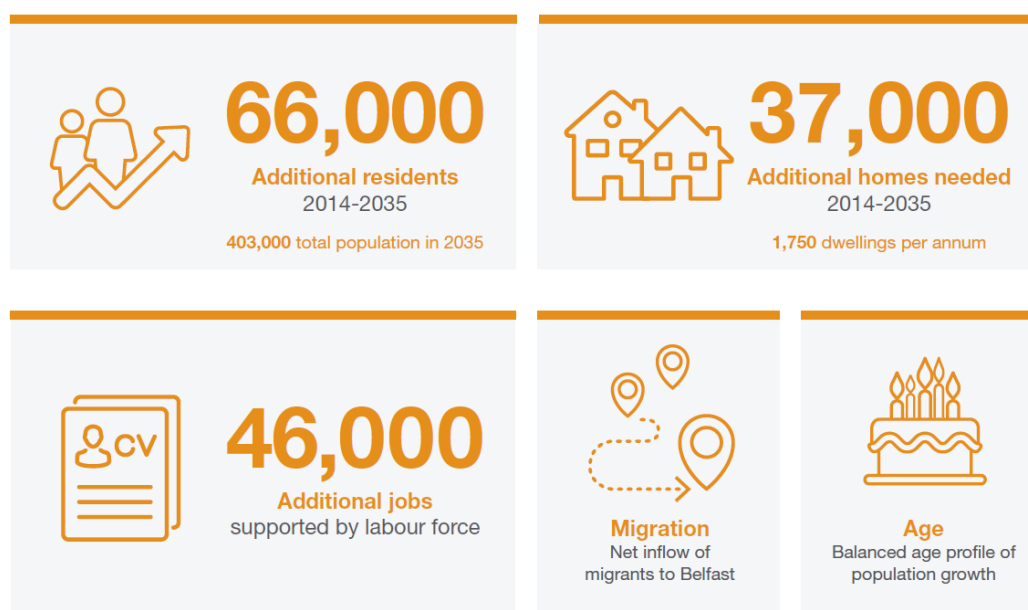|	Scenario 1 Adjusted Demographic Growth	Scenario 2 Supporting Baseline Employment Growth	Scenario 3 Supporting Higher Employment Growth
Additional residents	19,000	66,000	89,000
Additional homes needed	17,000	37,000	47,800
Additional jobs supported	–	46,000	69,000

Source: Edge Analytics; Turley

Evaluating the Growth Scenarios

5.	Each scenario suggests that a different level of population growth will occur in Belfast over the emerging plan period to 2035, translating into a need for between 17,000 and 47,800 additional homes. However, there is scope to refine this range, with this report considering and testing each scenario in the context of their likely demographic and economic implications. A headline assessment of the extent to which the levels of housing provision required could be supported by the market has also been presented, with a high-level consideration also given to the cross-boundary implications of each scenario. This has enabled a considered view to be reached on an appropriate and reasonable level of housing to be provided for through the emerging Belfast LDP.

6.	While Scenario 1 shows the strongest alignment with recent demographic growth trends, planning for this level of growth would present a number of risks to the sustainable growth of Belfast, continuing development at a rate which has been relatively suppressed compared to the more positive market and macro-economic context prior to the recession. Provision of this scale would also result in Belfast's population and housing stock continuing to grow at a slower rate than comparator UK cities, with the assumed continued net outflow of people from the city failing to significantly grow the labour-force, risking the city's future economic growth. It is therefore considered that Scenario 1 would not represent a preferable growth scenario for Belfast.

7.	While the relationship between employment and population is complex, providing for a higher level of housing growth would be more likely to grow the labour-force, enabling the attraction of new working-age residents and the retention of those existing residents who would otherwise move elsewhere in NI or overseas. It is considered reasonable and credible to plan for a growth in Belfast's economy at least in line with the baseline scenario developed by UU (Scenario 2), enabling a continued growth in the city's economy as in recent years.

8.	Whilst the higher levels of employment growth under Scenario 3 are credible, they would evidently represent a more ambitious and significant departure from longer term rates of growth. Such a departure could yield more marked changes in labour-force behaviour than allowed for within this report. This suggests an element of flexibility in

the potential need for housing under this scenario, with increasing levels of participation in the economy – associated with strong job growth and successful policy intervention aimed at this outcome – reducing the level of population and housing growth needed to support forecast job growth.

9. This is an important consideration, given that both Scenario 2 and Scenario 3 would require a significant uplift to the recent level of housing delivery in Belfast, returning to levels last seen prior to the economic downturn and assuming that these could be sustained throughout the plan period. Given that these levels of growth have not been consistently achieved in Belfast during recent years, some caution should be exercised when considering the level of development which can be realistically supported by the market over the plan period.

10. Collectively, these factors indicate that a reasonable and credible level of population and household growth sits somewhere between Scenario 1 and Scenario 2, with the evidence implying that this should be nearer to Scenario 2. The provision of **between 1,600 – 1,800 dwellings per annum** over the plan period appears reasonable in light of these considerations and the latest information available. Planning for this level of housing would support baseline levels of employment growth in Belfast through a growth in labour-force, while allowing for changes in labour-force behaviour which appear reasonable in the context of historic evidence but recognise that future changes could result from a more positive economic context. Growth of this scale would be likely to result in positive demographic and economic outcomes for Belfast, whilst uplifting recent levels of development by some 88% at the upper end of this range. While the scale of this uplift remains ambitious, it also appears realistic in light of the market's cyclical nature and historic capacity to consistently deliver comparable levels of growth, although this will require further consideration as planning policy is developed.

11. The implications of planning for a level of growth within this range are summarised below, based on the modelling underpinning Scenario 2 (1,750dpa) which sits within the identified range.

66,000
Additional residents
2014-2035
403,000 total population in 2035

37,000
Additional homes needed
2014-2035
1,750 dwellings per annum

46,000
Additional jobs
supported by labour force

Migration
Net inflow of
migrants to Belfast

Age
Balanced age profile of
population growth

1. Introduction

1.1 Turley and Edge Analytics were appointed by Belfast City Council (BCC) to undertake a study considering the future population and housing growth of Belfast[1].

1.2 This report presents the outputs of analysis considering the establishment of a reasonable range of potential scenarios of population and household growth within the Local Government District (LGD) of Belfast.

1.3 The development of these options builds upon a detailed baseline review of the key drivers of housing need and demand in Belfast, recognising the historical profile and future projections.

1.4 The potential scenarios of growth are subject to an evidence-based review and evaluation in order to arrive at a recommended position on a reasonable and credible level of population and household growth to be planned for.

1.5 The analysis in this report uses the latest available datasets which include the NISRA published 2014-based population projections for each of the LGDs across Northern Ireland. This forms an important update to the projections previously used by NISRA to develop the latest published Housing Growth Indicators (HGIs).

1.6 It is recognised that the HGIs published by NISRA form an important reference point for the development of planning policy. The latest published HGI for Belfast indicates a need for 13,700 homes between 2012 and 2025, or just over 1,000 homes per annum over this period. When comparing the analysis in this report with the HGI for Belfast it is important to recognise that:

- The latest 2014-based NISRA population projections have been used, updating the now superseded 2012-based dataset used in the HGIs;

- Modelled needs are assessed over a longer period of time to align with the emerging plan period of 2014 – 2035; and

- Beyond demographic factors and an allowance for vacant homes, the analysis also considers the impact of key drivers of the housing market including the future strength of the economy and a range of market signals.

1.7 It is understood that the recommendations in this report will be considered by BCC in the development of policies relating to the provision of housing within the emerging Belfast Local Development Plan (LDP). It is important to recognise that this report is limited to presenting an evidence-based consideration of housing need and demand drivers and does not represent policy.

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[1] References to Belfast throughout this report relate to the administrative area of Belfast City Council unless otherwise specified

Statistical Definitions

1.8   Unless otherwise specified, the evidence presented in this report relates to the latest LGD boundary, covering the current administrative area of BCC. It is important to note that the BCC administrative boundary was expanded in April 2015 to incorporate areas that were formerly covered by Lisburn City Council, Castlereagh Borough Council and North Down Borough Council. This increased the number of people living in the BCC administrative area within 2014 mid-year population estimates (MYE), as summarised in Figure 1.1.

Figure 1.1:   Population in Former and Current Belfast LGD 2014

	Population
Former Belfast LGD	283,166
New Belfast LGD	336,830
Change	**+53,664**

Source: NISRA, 2014

1.9   In interpreting the limited historic data based on the former Belfast LGD presented within this report, it is therefore important to recognise that this evidence relates to a smaller geographic area, with a smaller population.

Report Structure

1.10   This report is structured as follows:

- Section 2: Belfast's Housing Market

- Section 3: A Demographic Picture of Belfast

- Section 4: Economic Context

- Section 5: Potential Growth Scenarios

- Section 6: Evaluating the Growth Scenarios

- Section 7: Conclusion

2. Belfast's Housing Market

2.1 In order to consider the historic and future drivers of housing need and demand in Belfast, it is initially important to undertake a headline review of the current operation of the housing market in Belfast.

2.2 This is not intended to represent an exhaustive review of the operation of the housing market, but provides a clear analysis of signals of current need and demand and the extent to which these indicators have changed over time.

2.3 The balance between the need or demand for housing and supply manifests itself in a range of different symptoms of market health. Where there is an imbalance – with demand outstripping supply, for example – the market tends to respond through increases in prices and rents, with competition leading to market pressure.

2.4 Consideration of a number of these market signals is therefore useful in understanding the current health of the housing market, and the extent to which the balance between supply and demand has changed over recent years. This in itself is important in assessing the extent to which the operation of the market may have impacted upon projections of future population and household growth, which are based on extrapolating forward recent historic trends. The implications of the operation of the market on future projections of growth are an important area of analysis in the subsequent sections of this report.

Review of Housing Market Signals

2.5 This section provides an overview analysis of the following housing market signals:

- House prices;

- Private rented sector;

- Affordability;

- Development rates; and

- Housing land supply.

2.6 The analysis seeks to consider the latest available evidence and also considers changing historic performance where data is available. Market performance in Belfast is benchmarked and compared against other LGDs in Northern Ireland.

House Prices

2.7 The Northern Ireland Residential Property Price Index is published quarterly by NISRA and provides mean average house prices for Belfast, other LGDs and Northern Ireland more generally. The following table shows average house price in Belfast during the

latest full quarter[2], compared with Northern Ireland (NI) as a whole and other LGDs. The number of sales recorded during this period is also shown for context.

Figure 2.1:   Average House Price and Number of Sales by LGD (Q1 2016)

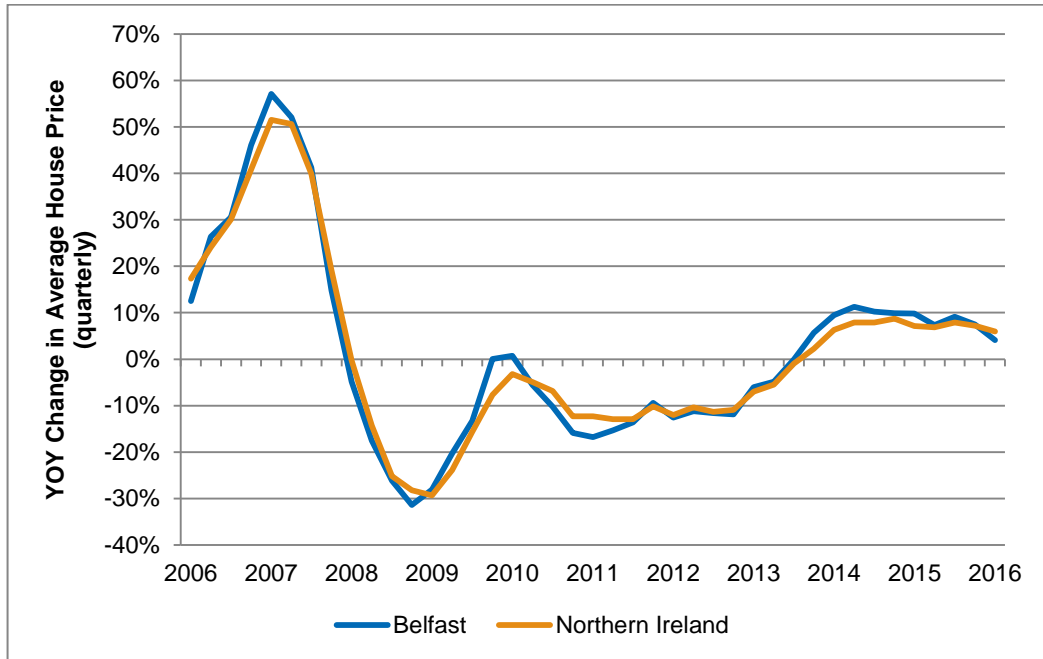|	Number of residential sales Q1 2016	Mean average price Q1 2016
Lisburn and Castlereagh	446	£140,686
Ards and North Down	549	£138,933
Mid Ulster	267	£121,209
Causeway Coast and Glens	473	£120,429
Newry, Mourne and Down	387	£120,018
Antrim and Newtownabbey	458	£119,479
Northern Ireland	5,272	£117,524
Belfast	**1,192**	**£110,042**
Mid and East Antrim	411	£109,918
Fermanagh and Omagh	202	£109,346
Armagh City, Banbridge and Craigavon	548	£105,087
Derry City and Strabane	339	£99,527

Source: NISRA, 2016

2.8   While almost one quarter (23%) of sales recorded in Northern Ireland by NISRA during the period shown occurred in Belfast, it is evident that the average house price in the City fell below the national average during this period. House prices in the City are, however, average in the context of other LGDs, falling below more expensive areas – such as Lisburn and Castlereagh and Ards and North Down – but surpassing lower value areas such as Derry City and Strabane.

2.9   It is important to understand the rate of change in house prices, given that this reflects a changing relationship between supply and demand. Where house price growth accelerates, this is likely to reflect an imbalance, while more limited growth in house prices can be an indicator of relatively low demand or other factors.

2.10   Year-on-year change in average house prices provides context on the changing relationship between supply and demand. The following chart compares the average house price in each quarter in Belfast and NI with the average price recorded in the corresponding quarter one year earlier. This shows that Belfast closely aligned with the national trend, with steep growth in average house prices to 2007 preceding a sustained period of decline. However, since Q3 2013, average house prices in both Belfast and NI have grown, albeit not to the same extent as seen prior to the recession. When

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[2] January – March 2016

considering the relationship between local and national trends, it is also important to recognise that a comparatively large proportion of NI transactions are recorded in Belfast, and market trends in the city can therefore influence the wider national trend to a degree.

Figure 2.2:   Year on Year Change in Average House Price 2005 – 2016

2.11   In understanding how the market in Belfast compares with other LGDs, the latest (Q1 2016) house price data can be compared against various points in the market cycle to understand the rate of longer term recovery in house prices as well as more recent market trends:

- Change since Q3 2007, which represented the pre-recession peak in the national housing market;

- Change since Q1 2013, where the average house price in NI plateaued following a sustained post-recession decline; and

- Change since Q1 2015, one year prior to the latest quarter available.

2.12   The change in LGDs' average house prices over the periods introduced above is presented in the following table.

Figure 2.3:   Change in Average House Prices by LGD

	Change Q3 2007 – Q1 2016	Change Q1 2013 – Q1 2016	Change Q1 2015 – Q1 2016
Antrim and Newtownabbey	-48%	17%	4%
Ards and North Down	-46%	16%	4%
Armagh City, Banbridge and Craigavon	-50%	23%	7%
Belfast	**-48%**	**25%**	**4%**
Causeway Coast and Glens	-50%	21%	12%
Derry City and Strabane	-45%	20%	5%
Fermanagh and Omagh	-43%	20%	14%
Lisburn and Castlereagh	-48%	16%	5%
Mid and East Antrim	-47%	13%	6%
Mid Ulster	-44%	30%	8%
Newry, Mourne and Down	-50%	21%	7%
Northern Ireland	-48%	21%	6%

Source: NISRA, 2016; Turley, 2016

2.13   Average house prices in all LGDs remain considerably lower than the pre-recession peak, although there has been a sustained period of recovery since the post-recession low. The average house price in Belfast has increased by 25% since this point (Q1 2013), which has surpassed the growth seen in NI more generally and is second only to Mid Ulster. The rate of growth has slowed more recently, however, with growth in Belfast over the last full year (4%) amongst the slowest in NI.

Private Rental Sector

2.14   At the 2011 Census, 16% of households in Belfast were privately renting from a landlord or letting agency, which is the largest concentration of households living in this tenure of the LGDs and surpasses the national rate (14%). Almost one quarter (24%) of all households privately renting in NI at the 2011 Census lived in Belfast.

2.15   The private rented sector therefore plays an important role in meeting housing needs. Research published by the Northern Ireland Housing Executive[3] (NIHE) highlights the relative concentration of rented properties in Belfast compared with wider Northern Ireland, with the LGD dominating the national rental market and accounting for around 40% of all rental transactions over the period from 2013 to 2014. This is summarised in the following table, based on NIHE data[4].

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[3] Northern Ireland Housing Executive (2015) Housing Research Bulletin – Issue 18, Autumn 2015
[4] Northern Ireland Housing Executive (2015) Housing Market Review 2015 – 2018

Figure 2.4:   Rental Transactions 2013 – 2014

	2013	2014
Belfast City Council area	10,531	9,584
Rest of Northern Ireland	15,867	13,810
Total rental transactions	**26,388**	**23,394**

Source: NIHE, 2015

2.16   The following table shows average rents in Belfast compared with the rest of Northern Ireland, based on data presented in the latest NIHE report[5] (Table 3). This shows that average monthly rent is higher than elsewhere in Northern Ireland, although there has been only minimal growth in average rents over the period shown.

Figure 2.5:   Average Monthly Rent 2013 – 2014

	Belfast City Council	Rest of NI	Northern Ireland
2013 Q1 – Q2	£589	£512	£543
2013 Q3 – Q4	£573	£508	£534
2014 Q1 – Q2	£602	£512	£548
2014 Q3 – Q4	£589	£520	£549

Source: NIHE, 2015

2.17   This is further disaggregated by property type within the following graph, showing that detached rented property has the highest monthly rent, although this declined slightly over the period for which data is available. All other property types saw an increase in average rents between 2013 and 2014, with terraced housing and townhouses exhibiting the greatest year-on-year growth.

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[5] Northern Ireland Housing Executive (2015) Housing Research Bulletin – Issue 18, Autumn 2015

Figure 2.6:   Average Rent by Property Type in Belfast 2013 – 2014
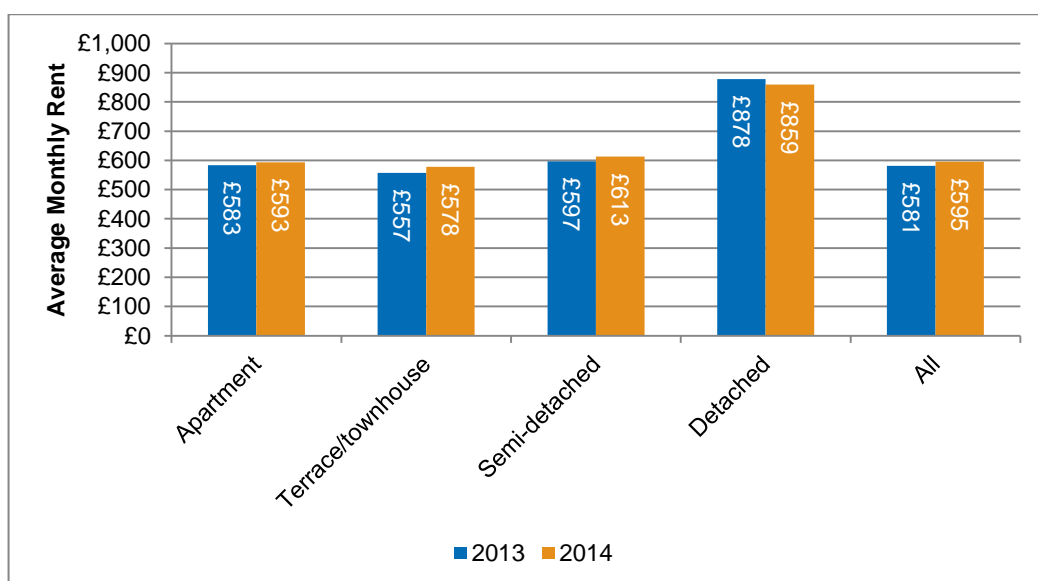
Source: NIHE, 2015

Affordability

2.18   NIHE research on housing affordability[6] has consistently identified the wider Belfast housing market area as an area characterised by a comparatively high proportion of unaffordable housing. In 2014, 67% of the housing stock was classified as unaffordable, second only to Derry, Strabane and Limavady (68%). Affordability has improved over recent years, however, given that 78% of stock was classified as unaffordable in 2010.

2.19   In addition, Ulster University produced research in September 2014 which considered affordability across NI and provided an updated measure of affordability[7]. The study confirmed that the housing market in NI remained in a stage of readjustment following the overheating that occurred in most areas during 2006/07. As noted above, this contributed to an improving picture of affordability.

2.20   In the context of Belfast, however, it is important to note that the research confirmed that whilst the deposit gap had fallen since 2010, the deposit requirement continued to represent 44.4% of annual income, with an associated saving period of around 1.5 years. Overall, this updated affordability confirmed that Belfast was the least affordable HMA in NI in both 2012 and 2013.

Development Rates

2.21   The Department for Communities' Housing Statistics report[8] contains data which shows how the total housing stock[9] has changed in Belfast and each of the LGDs since 2008. As shown in the following chart, Belfast has seen a decline in the rate of stock increase

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[6] NIHE (2015) Northern Ireland Housing Market Perspectives 2015 – 2018

[7] 'Affordability in the private housing market in Northern Ireland', Ulster University, September 2014

[8] Department for Communities (2015) Northern Ireland Housing Statistics 2014/15

[9] Housing stock is defined as a count of properties which are valued as domestic or mixed for the purposes of ratings. This refers to properties in the Valuation List which are used (or when next in use, will be used) for the purpose of a private dwelling

since 2008, which is likely to reflect a decline in the rate of new housing development in the city as the national economy struggled to recover from the recession.

**Figure 2.7:   Annual Change in Housing Stock 2008 – 2015**
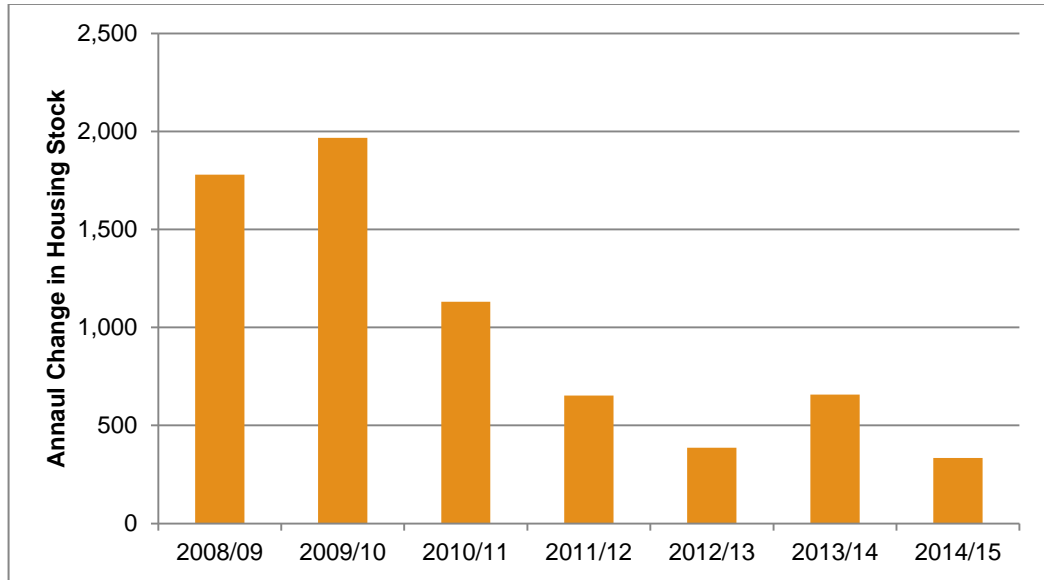
Source: Department for Communities, 2015

2.22   This is also reflective of a longer term trend evidenced in the former Belfast LGD, as shown in the most recent Housing Monitor[10] published by the former Department of the Environment. The Council has remodelled historic data since 2000 to the new Belfast LGD, as presented in the following chart. This shows that completions have slowed significantly over recent years, reflecting the national economy's struggle to recover from recession. Over the past five years (2010 – 2015), an average of 503 units have been completed annually, contrasting significantly with the preceding five year period (2005 – 2010) when an average of 1,953 units were completed per annum. Development peaked in 2007/08, when 2,360 units were completed in the city.

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[10] Department of the Environment (2014) Northern Ireland Housing Land Availability Summary Report 2013, updated July 2014

Figure 2.8:   Annual Housing Completions in Belfast 2000 – 2015
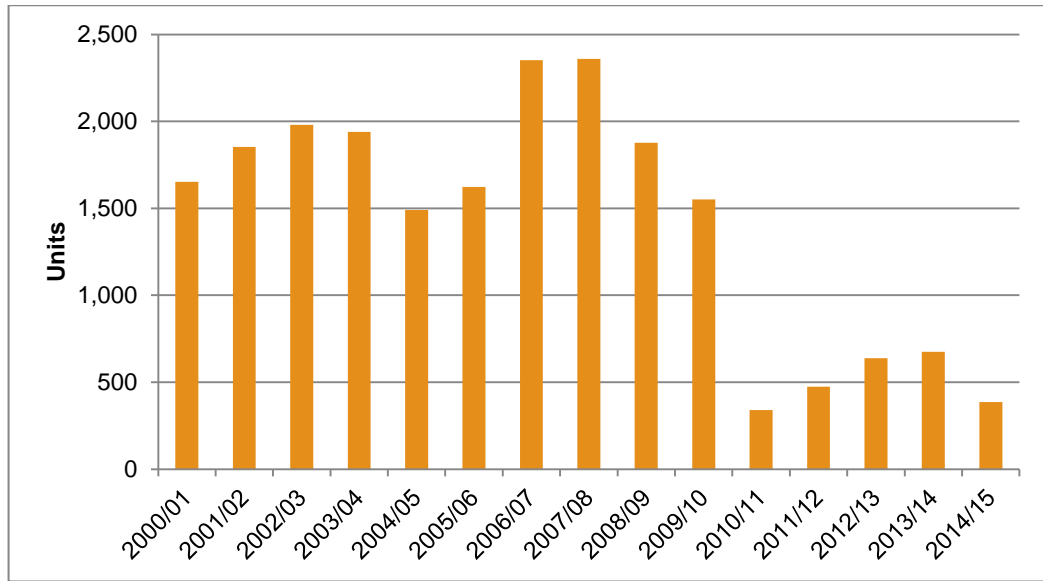
Source: BCC Housing Monitor for new Belfast LGD

2.23   Examining the historic monitoring data further, Figure 2.9 provides additional data considering the geographic split of completions since 2003/04 as well as integrating the latest 2015/16 dataset which is the first published dataset to use the redefined LGD boundary[11].

**Figure 2.9:   Housing Completions Comparison – Geographic sector breakdown**
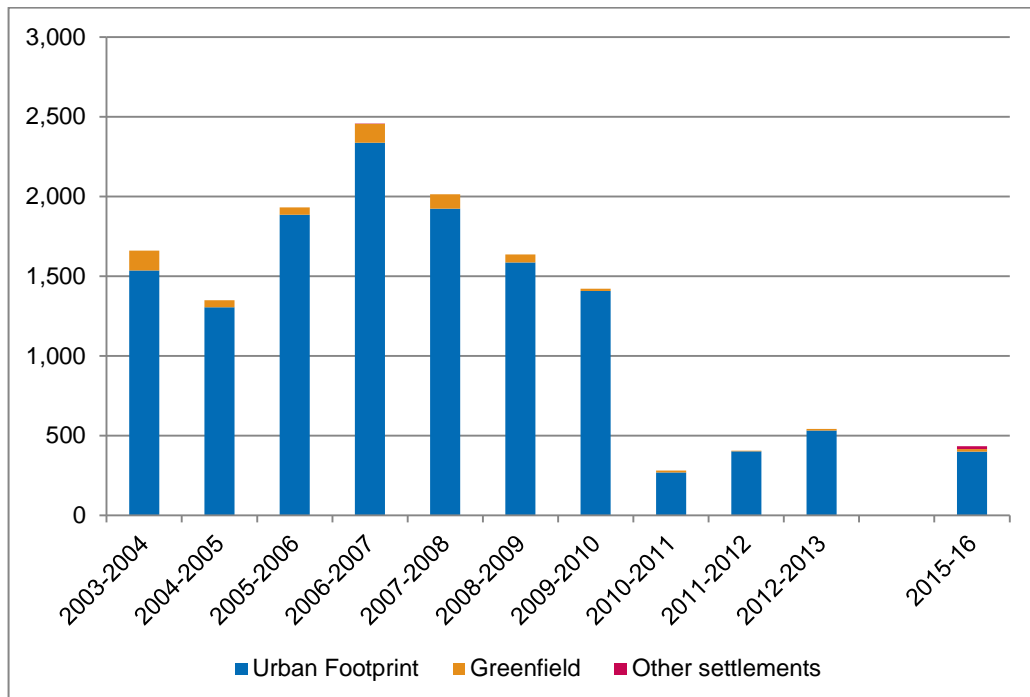
Source: DOE 2014; BCC Housing Monitor for new Belfast LGD

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[11] No data is available for 2013/14 and 2014/15 due to a change in the cycle of monitoring periods

2.24   It is clear that the majority of new homes have been built in the urban footprint. Over the years, the number of dwellings built on greenfield land has fallen, although this may be because overall completions have been low post-recession.

2.25   In terms of the sustained lower rates of development since the recession, this is a trend replicated across LGDs in NI, with additions to the housing stock during the period from 2008 to 2015 largely frontloaded within this period with more limited supply coming forward over more recent years. Across NI as a whole, two thirds of net additions to the housing supply over this time were recorded within the period from 2008 to 2011, with the more limited supply since subsequently growing the housing stock to a smaller degree.

Figure 2.10:   Profile of Increased Housing Stock 2008 – 2015
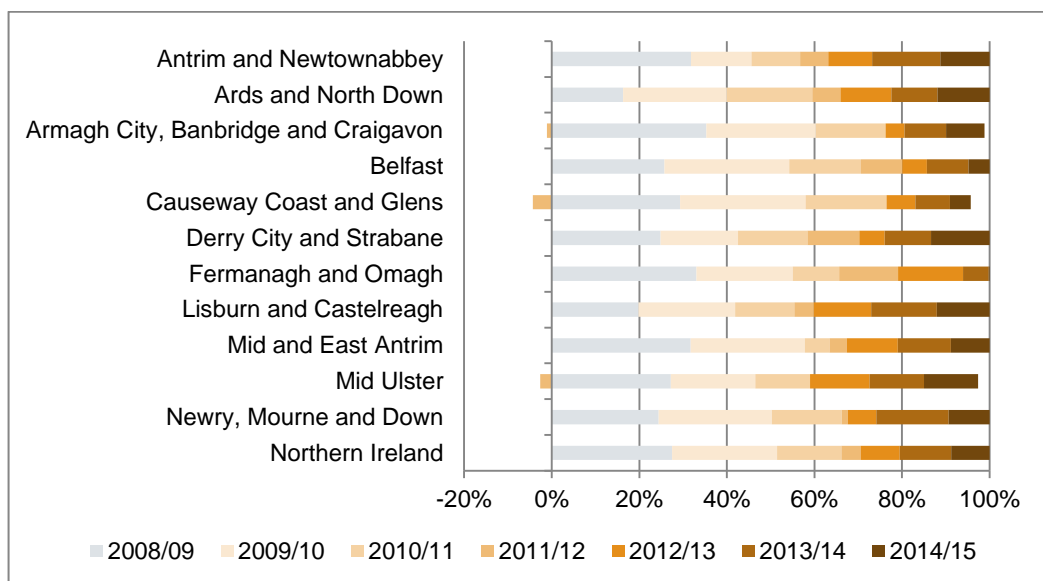
Source: Department for Communities, 2015; Turley, 2016

Housing Land Supply

2.26   The Housing Land Availability Monitor, commonly referred to as the Housing Monitor, was established by DoE Planning with a baseline position in 1997. It shows housing land availability for settlements, as defined in Development Plans, across Northern Ireland.

2.27   Each year the Divisional Planning Offices undertook a survey that updated housing information by site and settlement for Council areas/Districts in their respective operational area.

2.28   The purpose of the annual Housing Monitor is;

(i)   To monitor the course of housing development in settlements with regard to the RDS;

(ii)   To monitor progress of housing development in settlements in accordance with the provisions of prevailing Development Plans;

(iii)   To inform the preparation of Development Plans with regard to the allocation of land for housing; and

(iv)   To provide information on the available potential for further housing development in settlements.

2.29   The monitor sites are those identified as potentially suitable for residential development in prevailing development plans through zonings and any other urban sites that have been granted planning permission for residential development by means of a planning application. Sites where planning approval has expired will continue to be monitored where it is considered that potential for residential development still exists i.e., if a planning approval is renewed. Other land within settlements that is not included in the housing monitor will become a monitored site once identified as suitable for residential development as set out above.

2.30   The Housing Monitor sets out the cumulative number of dwellings on monitored sites which include:

•   new sites identified as suitable for residential development;

•   incomplete sites carried forward from the previous year;

•   completed sites to date.

2.31   A previously monitored site will be removed from the Monitor where any non-residential development commences or where a new or replacement development plan removes its potential for residential development.

2.32   To calculate the number of potential dwellings that could be accommodated on a site where only the site area is known, any estimate will be based on the characteristics of the site, for example, site location, landform or adjacent development form and density.

Belfast Housing Monitor 2015/16

2.33   Belfast City Council's most recent Housing Monitor provides data for the period 1 April 2015 to 31 March 2016.

2.34   This is the first survey which takes account of the new Council area. It cannot therefore be directly compared to the previous monitor data provided, which related to the old, smaller District, although some useful trends can be drawn out from the previous monitors.

2.35   This Housing Monitor provides totals for the whole of Belfast, as well as separate totals for the City Centre, Harbour Area, Outer Belfast (the rest of the City) and for Small Settlements (Loughview, Hannahstown and Edenderry – three villages on the outskirts of Belfast).

2.36   The 2015/16 Belfast Housing Monitor identifies a number of statistics, including the annual level of completions, area developed (ha), units developed within the urban footprint (%), potential available lands (ha) and the potential no. of units that could be accommodated on these lands.

2.37   The current total number of units that could be accommodated in Belfast is 24,726. It is calculated that these units could be accommodated on 456.5 ha of available land.

2.38   In terms of completions for the year, 434 units were built on approximately 14.4 ha of land within Belfast. 96.1% of the units completed during the year were located within Belfast's Urban Footprint, with only 3.9% located on greenfield land.

2.39   A continuation of this build rate would imply a theoretical land supply of 56 years. However, at the other extreme a sustained rate of delivery as seen at the height of the market i.e. 2,500 dpa (Figures 2.7/2.8) would suggest a theoretical land supply of between nine and ten years.

Sub-LGD Geographic Sector Summary

2.40   The 2015/16 Belfast Housing Monitor also provides a breakdown of the data by the different geographic sectors defined within the LGD. These sectors are;

- Outer Belfast;

- City Centre;

- Harbour Area; and

- Other Settlements

2.41   A majority (95.6%) of units completed from 1 April 2015 to 31 March 2016 have been in Outer Belfast with the remainder in Other Settlements. There have been no dwelling unit completions in the City Centre or Harbour Area.

2.42   In relation to land availability for housing, the 2015/16 Housing Monitor estimates an available land supply of 330.3 ha in Outer Belfast; 39.4 ha in the City Centre; 86.4 ha in the Harbour Area; and 0.4 ha in Other Settlements.

Figure 2.11: Potential by Sector

|	Potential Ha	%	Potential No.	%
Outer Belfast	330.3	72.35	15,616	63.16
City Centre	39.4	8.63	6,010	24.31
Harbour Area	86.4	18.93	3,096	12.52
Other Settlements	0.4	0.09	4	0.01
DISTRICT TOTAL	**456.5**	100.0	**24,726**	100.0

Source: BCC, 2016

2.43   The majority of land available is located in Outer Belfast (85.9%) which is estimated to be able to accommodate 70.52% of the potential dwelling units for Belfast at general suburban densities.

2.44   A higher density can be achieved in the City Centre. A tenth of the potential land available is estimated to be able to accommodate over a quarter of the total potential dwelling units. Higher density housing is generally found within the City Centre where there is a focus on apartment schemes.

2.45   The Harbour Area remains largely undeveloped with 86 ha estimated to be available and the assessed capacity to accommodate over 3,000 units.

Comparison with Previous Monitors

2.46   When establishing the current housing supply position, it is useful to assess previous Housing Monitor data.

2.47   In making comparisons with historic datasets it is important to recognise that previous Housing Monitors are more limited in terms of sector data; generally limiting the analysis to an overview of the District as a whole. It is also important to note the changed LGD spatial definition which makes direct comparisons difficult as well as the different time periods used with older Housing Monitor data recorded from the period beginning 1 August to 31 July each year as opposed to the most recent data which is recorded from 01 April to 31 March of each year.

2.48   Figure 2.12 compares the number of hectares developed annually with the land supply available, although the data for hectares developed is not available before 2007.

Figure 2.12: Hectares Developed/Available
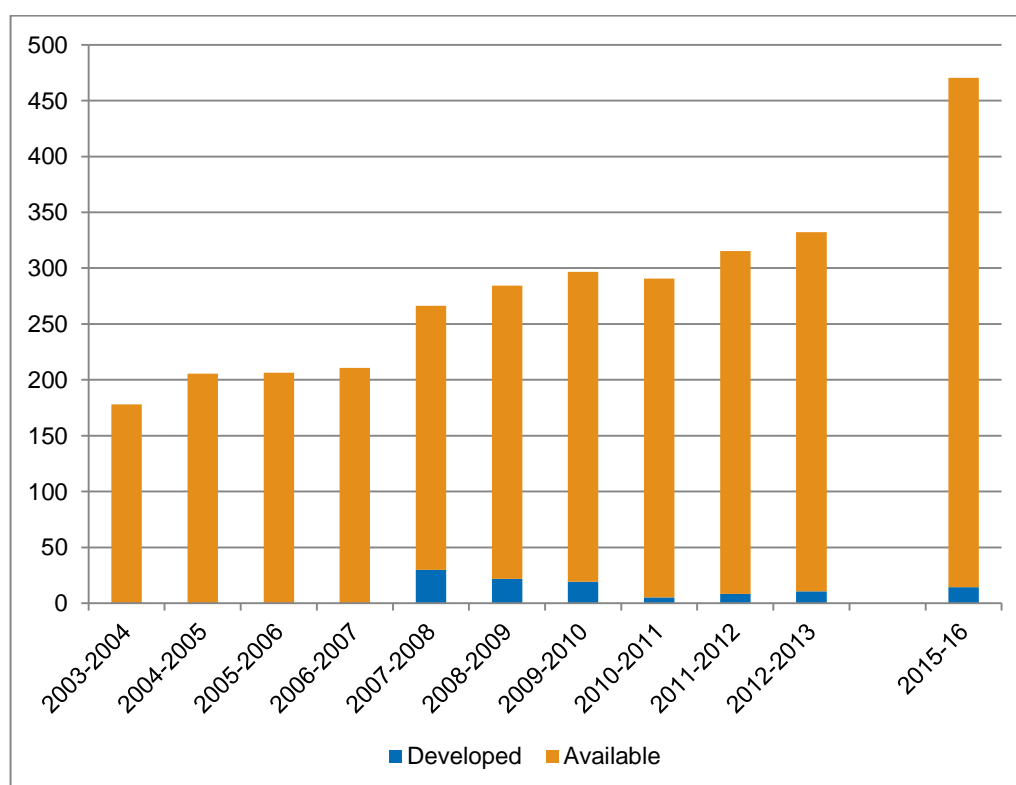
2.49   The amount of land available for residential development has generally increased over time; with a peak in 2015/16 given the additional land the Council boundary now includes post boundary change.

2.50   Despite the amount of land available increasing, the amount of land developed has
        generally decreased. This could be due to permissions on sites generally lasting 5 years
        in most cases being included in the available land supply but not being developed
        during and after the recession.

**Figure 2.13: Potential Dwelling Units**
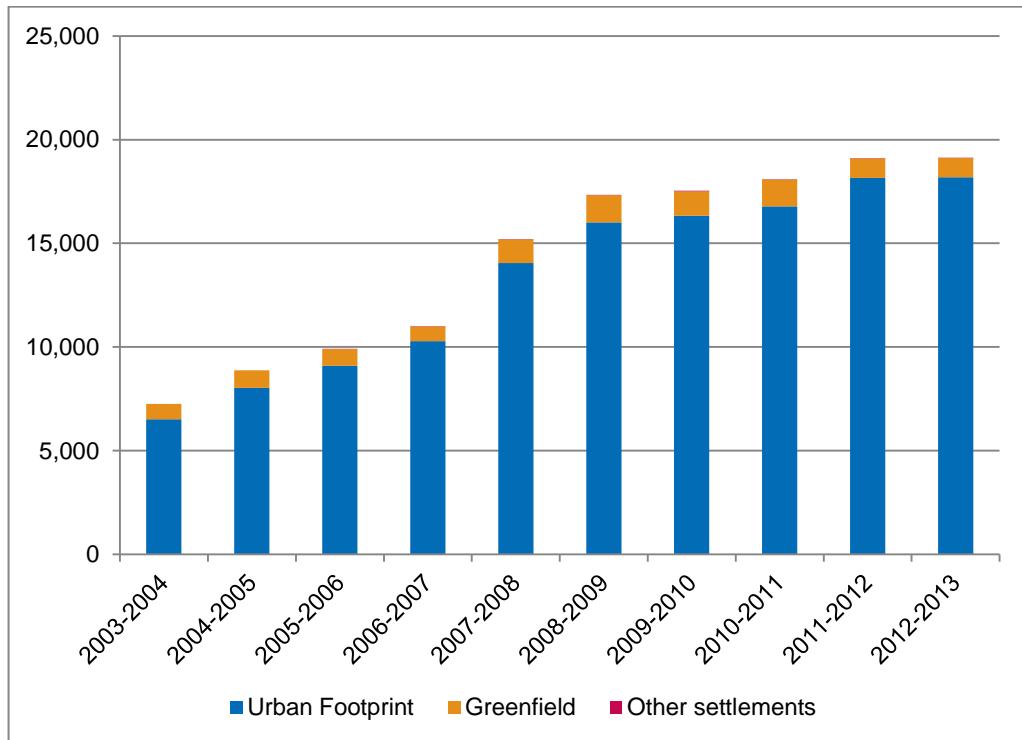
2.51   Figure 2.13 shows the potential dwelling units that could be accommodated in Belfast
        over a period of ten years, based on the old district boundary. The 2015/16 breakdown
        of potential dwelling units for the urban footprint and greenfield areas is not currently
        available in relation to the new district boundary.

2.52   The total number of potential dwelling units that could be accommodated in the new
        Belfast LGD is approximately 24,726. This is a substantial increase from the last
        available monitor which totalled 19,131. This is likely due to the inclusion of a large
        amount of land from the new boundary but additionally the inclusion of a large amount of
        land in the Belfast Harbour area in the most recent data. A majority of potential dwelling
        units would be located in the urban footprint, with a limited amount on greenfield land.
        Greenfield sites are normally pockets of land on the edge of the urban footprint but
        located within the settlement limit boundary.

2.53   Over a period of just ten years, from 2003 to 2013, the number of potential dwelling
        units has increased 2.6 fold.

2.54   Again the rapid increase from around 2007 onwards could be due to the 'boom times',
        where house building was at a high and there was an increase in planning permissions
        issued. The potential number of units has not levelled off, as many of these consents
        were not delivered and were not removed from the subsequent Housing Monitor, as
        many of the permissions would have still been live.

Figure 2.14: Proportion of Potential dwellings on Zoned Land
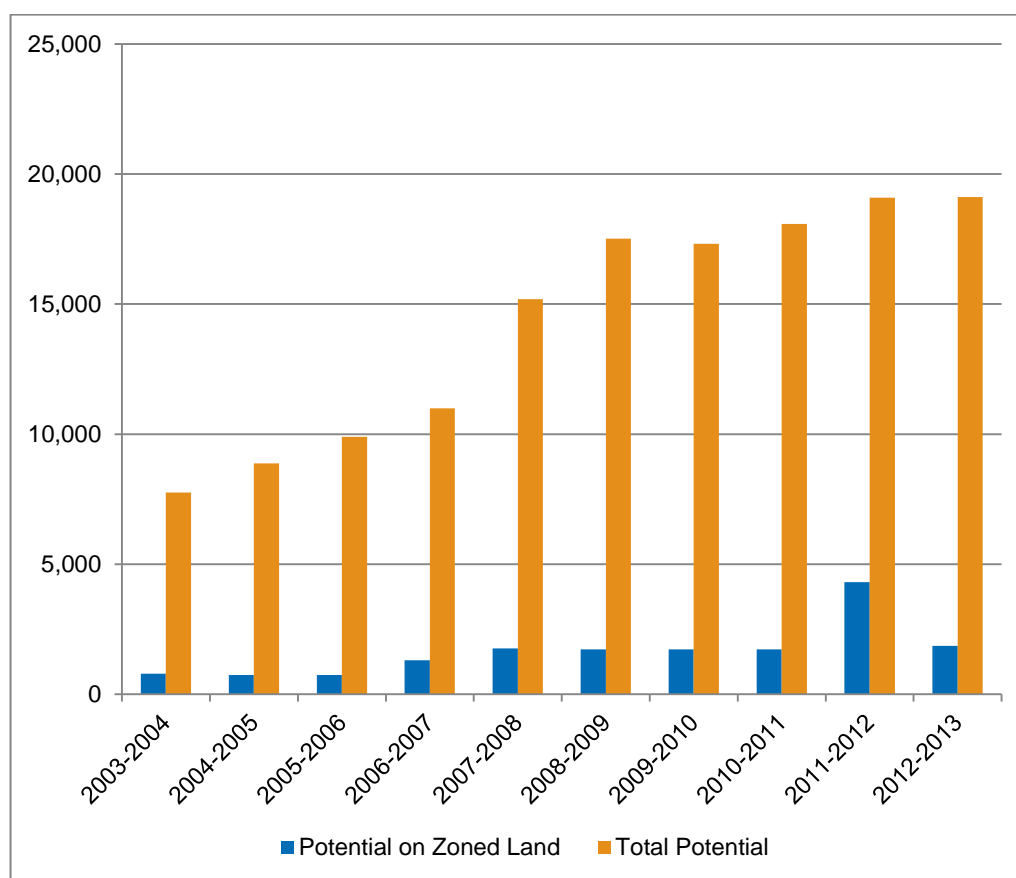
2.55 Figure 2.14 is perhaps one of the most useful indicators of housing land supply, especially when informing the LDP.

2.56 The chart runs over a period of ten years from 2003 to 2013, noting that there is no data available for the most recent two years.

2.57 Generally, as the total potential dwelling units increase, the potential on zoned land also increases. Although overall, a large majority of potential units are not accommodated on zoned land, but are rather derived from windfall sources made up of numerous smaller consents rather than the generally larger scale housing zonings in the development plan.

2.58 It is interesting that there are almost 3,300 housing monitor sites within the Belfast dataset, with 1,300 sites with remaining potential and 2,000 completed sites. Sorting these by the scale of remaining potential housing output, it is clear that a relatively small number of sites have the potential for larger numbers of housing, with less than 50 sites having the potential to accommodate more than 100 units. These sites with larger potential yields are a mix of zoned (for housing) and unzoned sites, with the largest sites (Titanic Quarter, Odyssey/Queen's Quays and Sirocco Works) located within the City Centre. The largest zoned housing sites tend to be located in north and west Belfast on the edge of the City.

2.59   Appendix 1 briefly identifies a selection of some of Belfast's larger zonings in order to profile the characteristics of the largest contributors to theoretical supply. These larger sites have the potential to significantly change the level and rate of housing delivery in the City.

Benchmarking against other UK Cities

2.60   During the preparation of its evidence base, BCC has sought to compare Belfast with other comparable UK cities, principally Bristol, Cardiff, Leicester, Newcastle, Nottingham and Sheffield. This section benchmarks Belfast's market signals with these comparator cities and their respective respective housing markets. The headline analysis presented below considers and compares house price and development trends in each of these cities.

House Prices

2.61   The recently released UK House Price Index[12] tool enables a direct comparison between average house prices in Belfast and other cities in England and Wales, as of April 2016. As shown in the following chart, the average house price in Belfast is lower than the comparator cities presented, with considerably lower prices than Bristol but a closer similarity with Nottingham.

Figure 2.15:   Average House Price (April 2016)
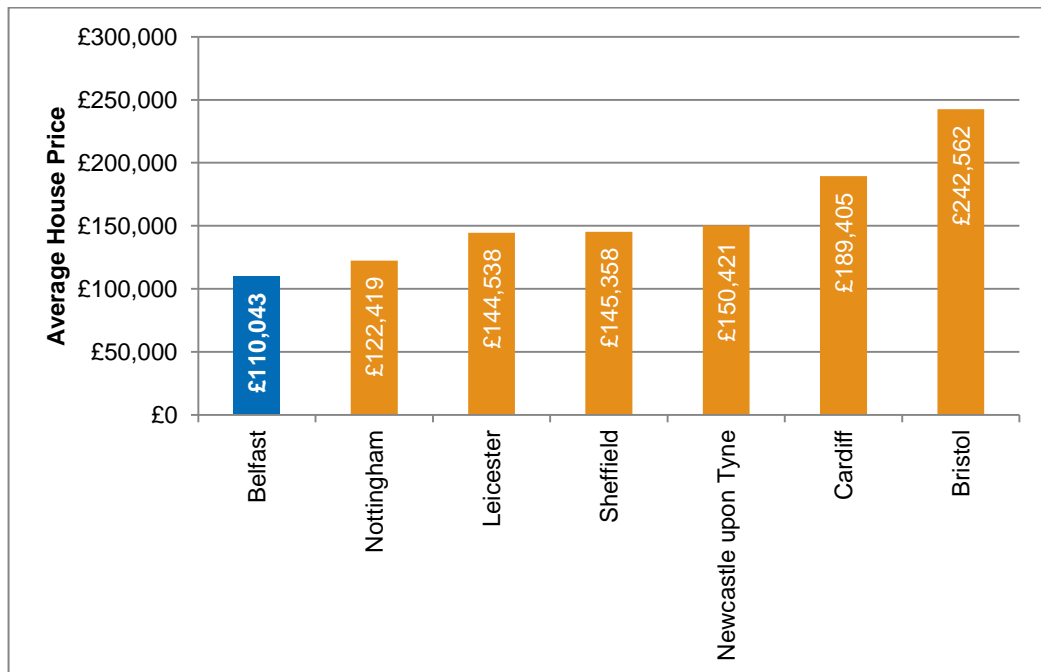
Source: Land Registry, 2016

2.62   Interpreting the absolute house prices presented above should recognise the macroeconomic context in respective national housing markets. In the case of Belfast,

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[12] http://landregistry.data.gov.uk/app/ukhpi/explore

this is particularly important given that the average house price in England and Wales was 91% and 19% higher respectively than the NI average in April 2016[13].

2.63 On this basis, it is beneficial to understand the rate of change in house prices at a headline level. As shown in the following table, Belfast is the only comparable city where the average house price in April 2016 was lower than recorded ten years ago, with Bristol and Cardiff in contrast seeing relatively significant growth over this period. For Belfast, this reflects a range of factors, including the effect of the recession on house prices across NI and a subsequent relative stagnation in average house prices.

Figure 2.16: Change in Average House Prices (April 2006 – 2016)

|	April 2006	April 2016	Change
Bristol	£159,214	£242,562	52.3%
Cardiff	£154,183	£189,405	22.8%
Leicester	£121,591	£144,538	18.9%
Sheffield	£127,677	£145,358	13.8%
Nottingham	£112,267	£122,419	9.0%
Newcastle upon Tyne	£146,974	£150,421	2.3%
Belfast	**£134,321**	**£110,043**	**-18.1%**

Source: Land Registry, 2016

Rate of Development

2.64 The earlier analysis highlighted a significant slowdown in the rate of growth in the housing stock of Belfast over recent years. Comparable data[14] can be sourced for other UK cities, although – given the absence of a consistent GB-wide measure of new housing development – this represents only a broad illustrative analysis due to potential inconsistencies in data recording.

2.65 In order to understand change, the annual growth in the housing stock can be indexed to respective 2008/09 levels, and – as shown in the following chart – this highlights that the majority of cities have seen a slowdown in the level of growth in the housing stock. The data suggests that only Newcastle upon Tyne has seen a significant increase in housing development rates over this period, albeit having started from a comparatively low base during the recessionary period when the Regional Spatial Strategy (RSS) sought to deliver a '*step-change in the rate of new housing development in the City*'[15].

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[13] England - £224,731; Wales - £139,385; Northern Ireland - £117,524
[14] Department for Communities Housing Statistics Report (NI); DCLG Live Table 125 (England); StatsWales (dwelling stock estimates by local authority and tenure)
[15] Newcastle City Council (2009) Local Development Framework – Annual Monitoring Report for 2008/09

Figure 2.17: Change in Annual Housing Stock Growth 2008 – 2015
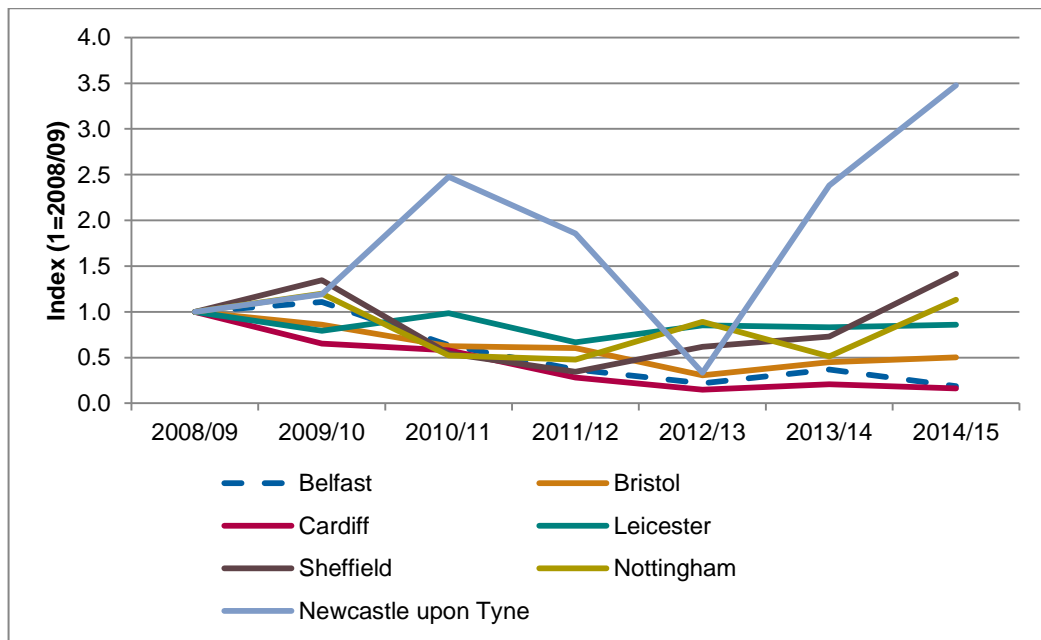
Source: DCLG; Department for Communities; StatsWales

Summary and Implications

2.66   This section considers a number of market signals to assess the operation of the housing market in Belfast. Wherever data is available, these signals are considered over time in order to understand changing performance over time. Equally, the analysis seeks to compare Belfast with other LGDs across NI, with a short section also comparing house prices and development rates in Belfast with other UK cities.

2.67   Looking firstly at average house prices for the latest quarter (Q1 2016), Belfast records an average price below the NI average and notably lower than the adjacent LGDs of Lisburn and Castlereagh and Ards and North Down in particular. In terms of changes to house prices, Belfast has closely tracked the wider NI picture, which has seen prices return to a picture of growth from 2013 onwards. Belfast has indeed seen the second highest rate of growth over this more recent three year period (behind Mid Ulster) when compared against the other LGDs, with prices increasing by 25% in Belfast over this period. Compared to other UK cities, however, house prices in Belfast are relatively low, and notably remain lower than recorded a decade ago unlike all other comparator cities.

2.68   In terms of the private rental market, it is evident that this component of the market is relatively significant in Belfast when compared with many other areas in NI. Almost one quarter (24%) of all households privately renting in Northern Ireland at the 2011 Census lived in Belfast. Reflecting the comparative strength of the market, Belfast records average rents which are higher than the national average.

2.69   Affordability has improved in Belfast as it has done across NI over recent years as house prices have corrected themselves. Research by Ulster University, however, confirmed that despite improvements Belfast remained the least affordable area in NI

over both 2012 and 2013. The research also notes that a return to rising house prices would lead to a return to worsening affordability issues, and this is notable in the context of the price growth highlighted in this section.

2.70 The rate of development in Belfast fell considerably from 2009, with the last four years characterised by a sustained low level of development. This trend is replicated across LGDs in NI, with two thirds of net additions since 2008 recorded in the first three years of this period (2008 – 2011) and the more limited supply since subsequently growing the housing stock to a lesser degree. This trend is also prevalent across comparable UK cities, with the exception of Newcastle upon Tyne.

2.71 According to housing monitor information there is a large supply of housing land remaining within Belfast city. Depending on the build rate used, the remaining potential supply could last between 8 years (peak build rate) and 50 years (latest years build rate). The low rate of construction after the recession is, in part, likely to be a function of the capacity of the local housebuilding sector, as well as the availability of developable land.

2.72 A significant majority of the potential housing land supply is provided by unzoned, windfall and opportunity sites, many of which constitute infill development or redevelopment at higher density within established residential areas. Only a relatively small number of sites with the ability to deliver larger numbers of houses in the medium to long term. The larger sites are a mix of City Centre apartment-led schemes such as Titanic Quarter, Sirocco and Queen's Quay (Odyssey) and outer city sites principally in North and West Belfast.

2.73 Supply side and deliverability considerations are important in establishing the overall number of homes to plan for over the plan period. More work is required to understand the deliverability of this theoretical housing land supply to achieve the type of understanding required by planning policy. In particular, the Council needs to understand the balance between deliverable inner (City Centre) and outer City sites as well as the proportion of land supply for social and affordable housing.

3. A Demographic Picture of Belfast

3.1   Within this section, we consider the changing demographic profile of Belfast, considering the city's changing population, its formation into households and its influencing factors. This draws upon official statistics published by NISRA, including the latest official population projections and alternative demographic growth scenarios developed by Edge Analytics.

3.2   In considering the demographic data within this section and research published prior to April 2015, it is important to note that the BCC authority boundary was expanded at this date to incorporate areas that were formerly parts of Lisburn City Council, Castlereagh Borough Council and North Down Borough Council. This administrative change resulted in a population increase of approximately 53,000 in 2014.

Recent Demographic Change

3.3   The population of Belfast has shown a comparatively significant level of volatility, even over a short historic period. A substantial long-term decline in the population of the former Belfast LGD is evident over recent decades, as summarised in the following table which summarises the findings of the Census. This resulted in the city's population forming an increasingly small proportion of the overall NI population.

**Figure 3.1:   Population Trends in Former Belfast LGD 1971 – 2011**

Year	Northern Ireland	Former Belfast LGD	Belfast as % of NI total
1971	1,536,065	416,680	27.1%
1981	1,490,228	314,270	21.1%
1991	1,577,836	279,240	17.7%
2001	1,685,267	277,390	16.5%
2011	1,810,863	281,000	15.5%

Source: NISRA

3.4   Over the decade to 2011, the decline in Belfast's population reversed, with a small increase in its population. Nevertheless, the population in 2011 remained approximately one third smaller than its respective 1971 position.

3.5   A recent study benchmarked population growth in Belfast against comparable UK cities over the period from 1951 to 2011[16].

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[16] Changing population in Belfast, Professor Frank Gaffikin (Queen's University Belfast) – Knowledge Exchange Seminar Series

Figure 3.2: **Population Growth in Belfast and Other UK Cities 1951 – 2011**
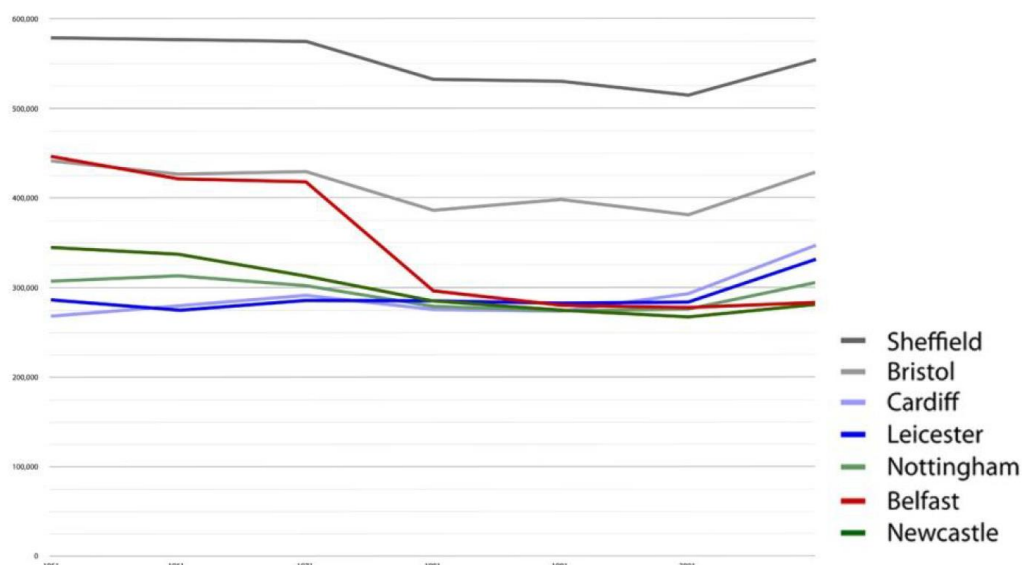
Source: Prof Frank Gaffikin, Queen's University Belfast

3.6   The population of six of the seven cities shown has increased over more recent years, with Sheffield, Bristol and Cardiff for example showing population increases in the region of 40,000 since the turn of the century. Belfast has seen more limited population growth over this period, and indeed has not recovered from the significant population loss recorded in the 1970s.

3.7   Mid-year population estimates (MYE) published by NISRA provide a slightly updated position on the population of Belfast, which is based on the updated LGD boundary definitions and therefore cannot be directly compared with Figure 3.1 above. The following chart shows the change in population annually between 2001 and 2014.

Figure 3.3: **Mid-Year Population Estimates Belfast: 2001 – 2014**
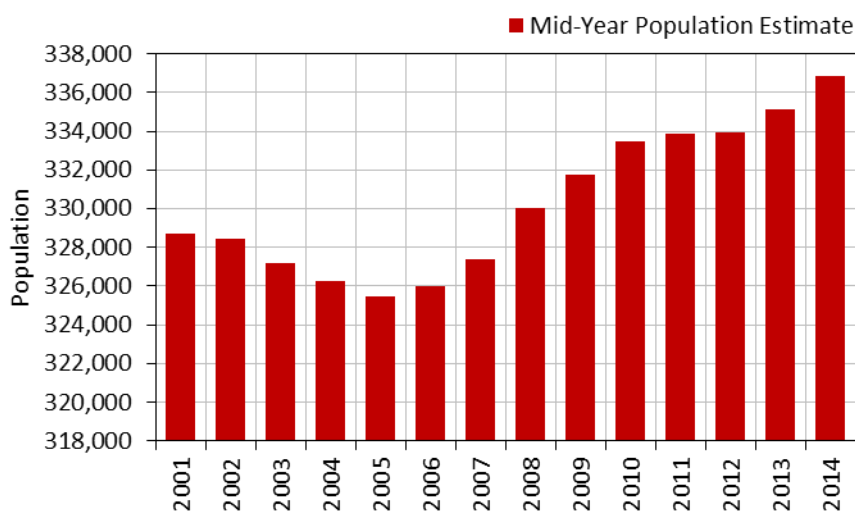
Source NISRA, 2016

3.8   It is evident that Belfast's population continued to fall through the first half of the last decade, reaching a low point in 2005. Subsequently, the LGD saw its population increase rapidly to 2010, with the scale of growth then flattening out to 2012 with the last two years seeing a return to stronger growth. The population of Belfast in 2014 stood at 336,830.

3.9   This change can be further broken down by age. Figure 3.4 compares the size of different age groups in 2001 and 2014, enabling an understanding of the changing age profile of Belfast's population.

**Figure 3.4:   Change in the Age Profile of Belfast 2001 – 2014**
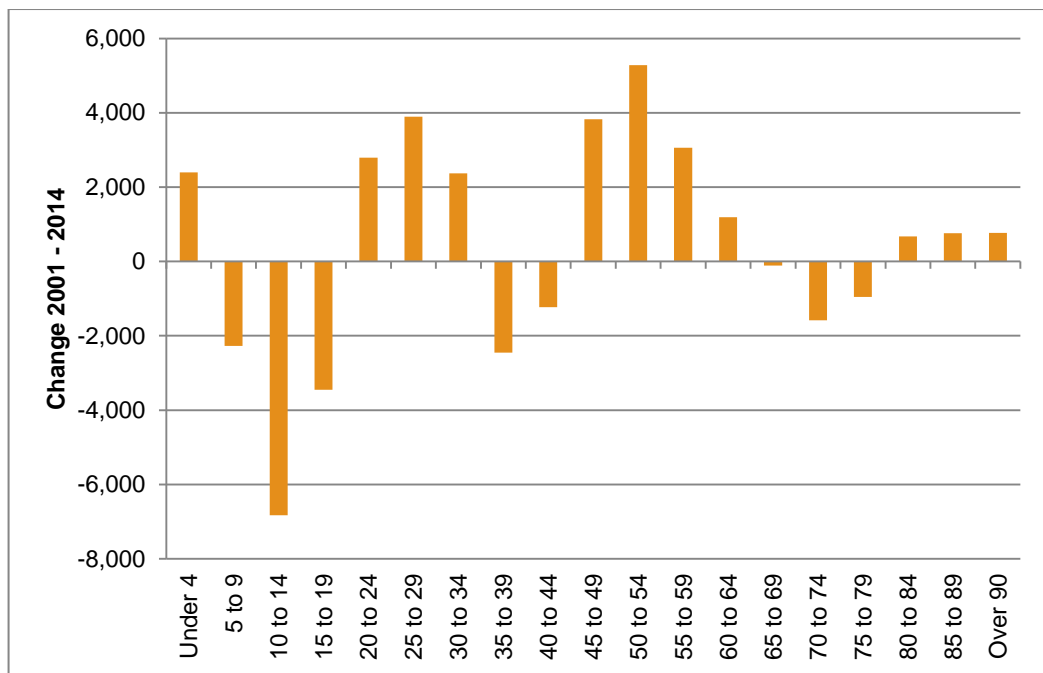
Source: NISRA, Turley, 2016

3.10   While the overall population of Belfast increased between 2001 and 2014, several age groups declined in size during this period. This includes younger people aged 5 to 19, residents aged 35 to 44 and those aged 65 to 79 years old. The strongest growth occurred in those aged 50 to 54 over this period, but comparatively strong growth was also seen in the those age groups around this cohort (45 to 64) and the younger working age population (20 to 34).

Components of Population Change

3.11   The MYE dataset enables consideration of the different roles of natural change (the surplus or deficit of births over deaths) and migration in driving population change. NISRA distinguishes three migration flows: internal (within NI), GB (between NI and the rest of the UK) and international (between NI and the rest of the world). Figure 3.3 shows the role of these components in driving population change on an annual basis in Belfast.

Figure 3.5:   Belfast Components of Population Change – 2001/02 – 2013/14
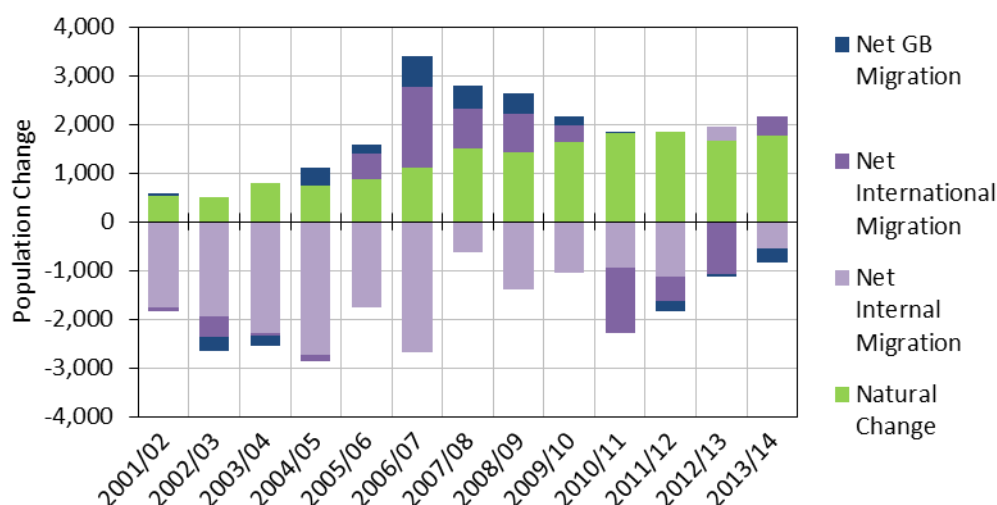
Source: NISRA, Edge Analytics 2016

3.12   It is clear that natural change has played an increasingly important role in growing the population of Belfast. By contrast, with the exception of 2012/13, internal migration within NI has been a net negative factor of population change, implying a net flow of people out of Belfast to other parts of Northern Ireland. However, the recent scale of this net outflow has been consistently lower than the levels seen prior to 2007/08. With regards to this component, it is clear that there is a significant distinction in the scale of the net outflow seen on average over the first half of the period presented and the second half.

3.13   While the 2011 Census only provides a snapshot of migration trends, it nevertheless enables a more detailed understanding of migration between Belfast and other areas of NI, albeit based on the former Council areas.

3.14   Figure 3.6 shows gross migration flows – the sum of in and out flows – between Belfast and the other former Council areas, providing an indication of the strength of migration flow in both directions between Belfast and other parts of the country.

Figure 3.6:   Gross Migration Flows between Belfast and Former Council Areas 2011
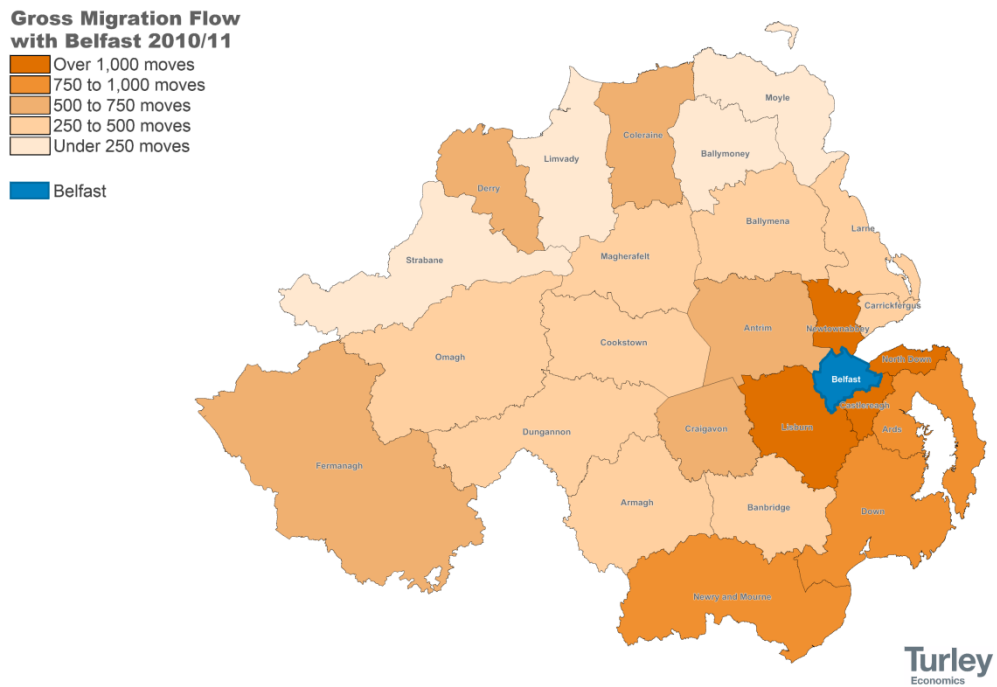
Source: Census 2011, Turley, 2016

3.15   At the time of the Census, Belfast shared the strongest migration relationship with areas proximate to the former administrative area, including Castlereagh, Lisburn, Newtownabbey and North Down. There is also a relatively strong relationship with areas to the south, with a weaker flow of people between Belfast and authorities to the north of NI.

3.16   Whilst gross flows are useful for illustrating the scale of relationship irrespective of direction, it is also important to consider net flows to determine the direction of the flow of people. These flows are illustrated in Figure 3.7.

Figure 3.7:   Net Migration Flows to Belfast from Former Council Areas 2011
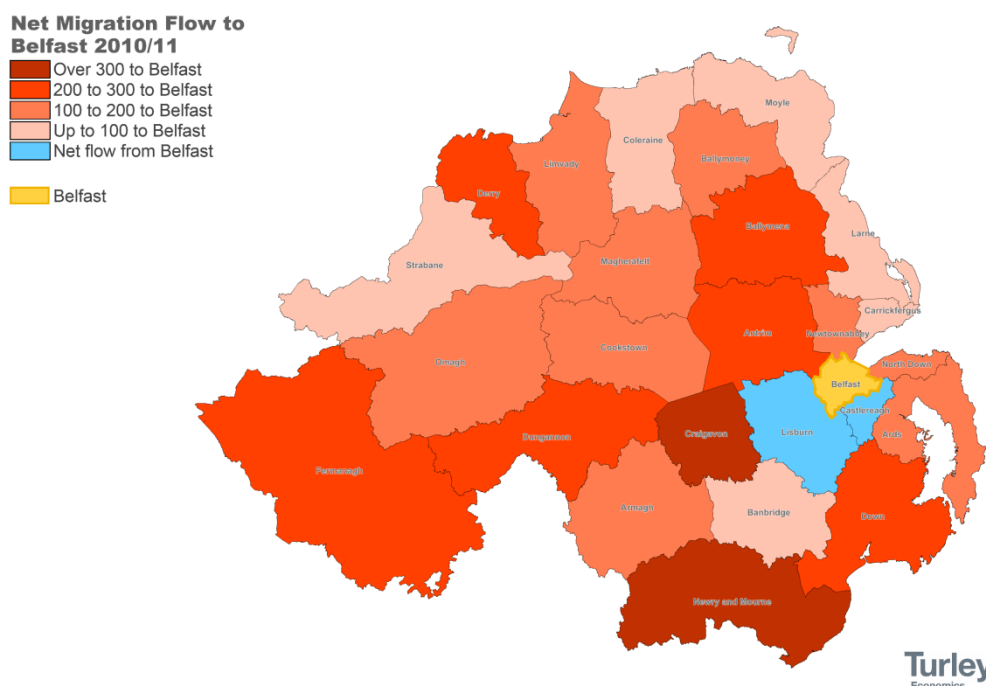
Source: Census 2011, Turley, 2016

3.17   In the year 2010/11, Census data suggests that only two former Council areas (Lisburn and Castlereagh) received a net inflow of migrants from Belfast, with the number of residents moving to Belfast from these areas outnumbered by the flow in the opposite direction. All other areas – particularly Craigavon and Newry and Mourne – saw a net outflow of migrants to Belfast.

3.18   While net internal migration has been a significant driver of population change in Belfast, Figure 3.5 also shows that net international migration played an important role in driving population growth between 2005/06 and 2009/10 in particular. This reflects a wider national picture across NI, with the population growing as a result of immigration exceeding emigration following the expansion of the EU. Interestingly, this period also saw a net inflow from other parts of Great Britain into NI. Since 2010/11, the net international migration flow across NI has been almost zero, with this also reflected in Belfast with a return to net outflows with the exception of the last year.

Household Profile

3.19   While the population of Belfast grew by approximately 1.6% between 2001 and 2011, the number of households in the city grew by 6.1%, or 8,106 households. This suggests that the size of households – the division of the total population into households – has reduced over this period. Indeed, the Census shows that the average household size in Belfast fell between 2001 and 2011, as summarised in the following table.

Figure 3.8:   Changing Household Size in Belfast 2001 – 2011

	2001	2011	Difference
Average household size	2.46	2.32	-0.14

Source: NISRA, Edge Analytics, 2016

3.20   This is reflective of a wider trend seen across NI, with the following chart comparing household size in NI from the last seven Censuses and showing that the average household size has nationally fallen over the last 60 years.

**Figure 3.9:   Northern Ireland Average Household Size 1951 – 2011**
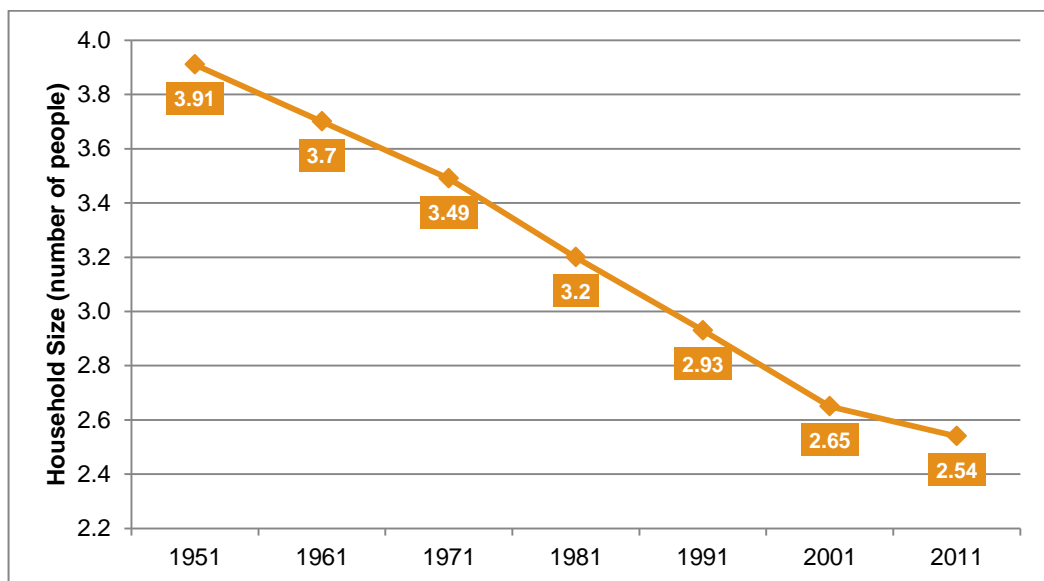
Source: NISRA

3.21   Interestingly, it is clear that the rate of change slowed considerably in the last decade, relative to the longer term trend. This could be influenced by a range of factors considered elsewhere in this report. The worsening affordability of housing could have historically restricted the formation of new households unable to afford market housing, for example, with this compounded by the economic downturn which led to a sharp reduction in the supply of new housing.

3.22   Household size can also be influenced by the type and size of accommodation available, particularly at a local level. The 2011 Census calculates the average number of residents in each Small Area (SA) in Belfast. This clearly highlights the smaller average size of households in more central areas of Belfast, with larger households to the south-west of the city centre in particular. This is likely to at least partially reflect the type of housing available in these locations, and influence the size of households in these areas.

Figure 3.10:   Average Household Size by Small Area 2011
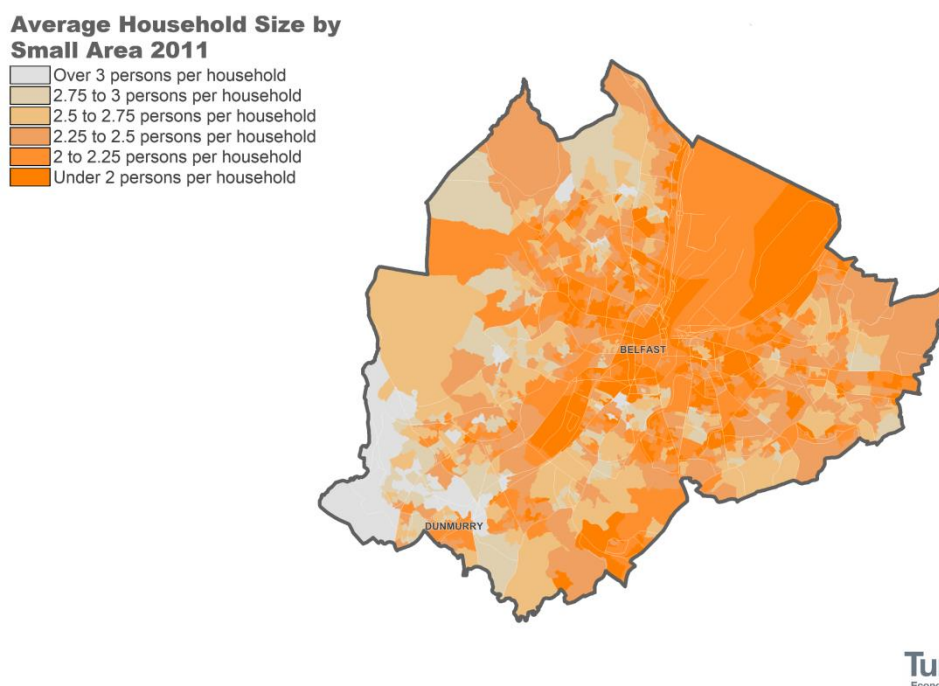

Source: Census 2011

Factors Influencing Historic Population Change

3.23   It is apparent that Belfast's population has been relatively static over recent years and indeed going back to the 1970s has seen a decline. Whilst the overall picture has been relatively static, it is also clear that the drivers of population change – principally the role of migration – have seen a greater degree of change.

3.24   This section considers the extent to which a number of factors have potentially impacted upon and influenced the changing demographic profile of Belfast in the recent past.

Development Context

3.25   As identified in Figure 2.7 and Figure 2.8 of this report, the rate of new housing development in Belfast has slowed significantly since 2008. This can influence historic demographic trends, given the relationship between population, household growth and supply.

3.26   Migration is a factor which can be particularly influenced by the availability of new housing. As shown in the following chart, the acceleration in development between 2004 and 2007 coincided with a reduced net outflow of migrants from Belfast, and is also likely to have influenced the net inflow to the city in 2007/08 given the lag-time often associated with the occupation of new housing. In contrast, the sharp reduction in completions post-2010 saw a return to a strong net outflow of migrants from Belfast.

Figure 3.11: Net Migration to Belfast 2001 – 2014
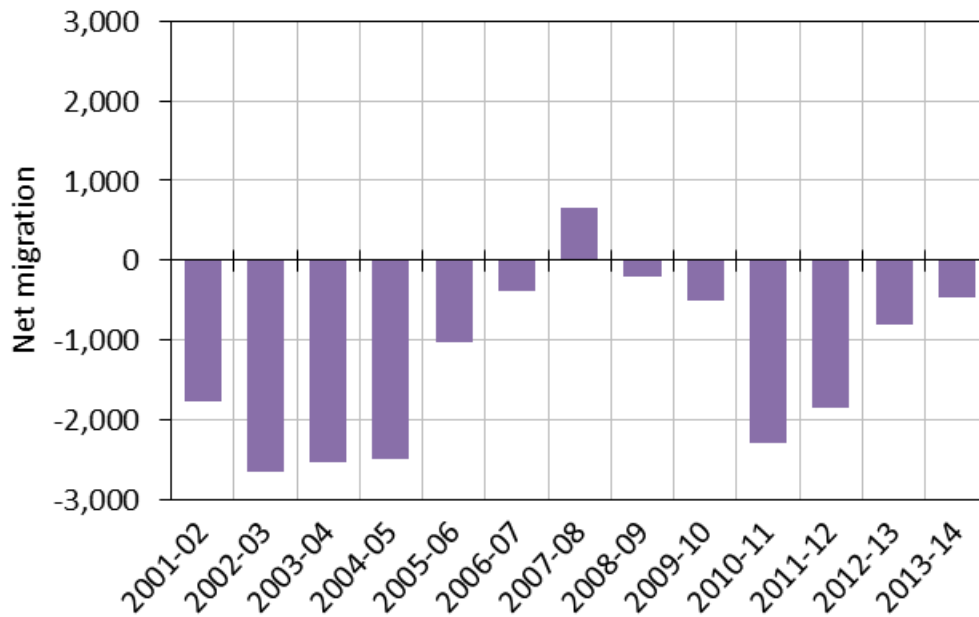
Source: NISRA

Students

3.27   Figure 3.4 shows that the representation of younger residents in the Belfast population has continued to increase over recent years. This is likely to at least partially reflect the sizeable student population of Queens University Belfast and Ulster University. While the former is wholly located in the Belfast City LGD, Ulster University has additional campuses at Coleraine, Jordanstown and Magee, with only a proportion of the University's students located in Belfast.

3.28   Statistics published by the Higher Education Statistics Agency (HESA) show that the number of students registered at Queens University Belfast has remained relatively steady at circa 24,000 over the past decade, having increased during the late 1990s. For each academic year, international students represent around one in ten of all studying at the University.

Figure 3.12:   Change in Students at Queens University Belfast 1995 – 2015
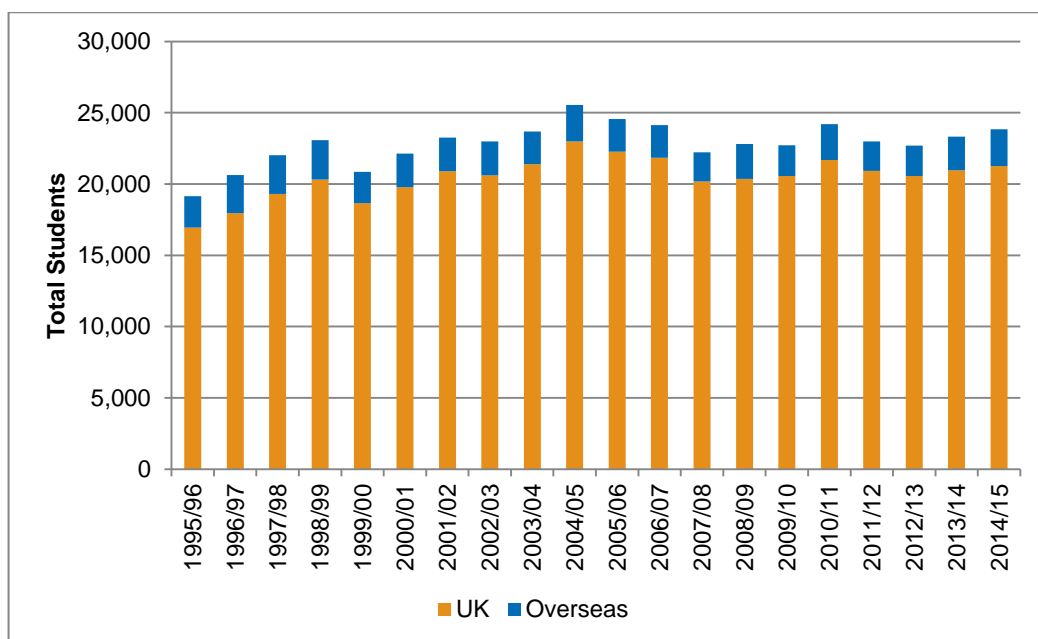
Source: HESA, 2016

3.29   The number of students registered at Ulster University has also increased over the same period, although there has been a modest fall in the number of students since the peak in 2005/06. It is important to note that only a proportion of students registered at the University are based in Belfast, although the planned closure of the Jordanstown campus in 2019 and investment in a new Belfast campus is likely to generate a future increase in student numbers in Belfast[17].

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[17] It is understood that there is a plan for 15,000 students and staff to be accommodated in Belfast city centre at Ulster University (http://www.ulster.ac.uk/ulster-life/campuses/belfast)

**Figure 3.13:   Change in Students at Ulster University 1995 – 2015**
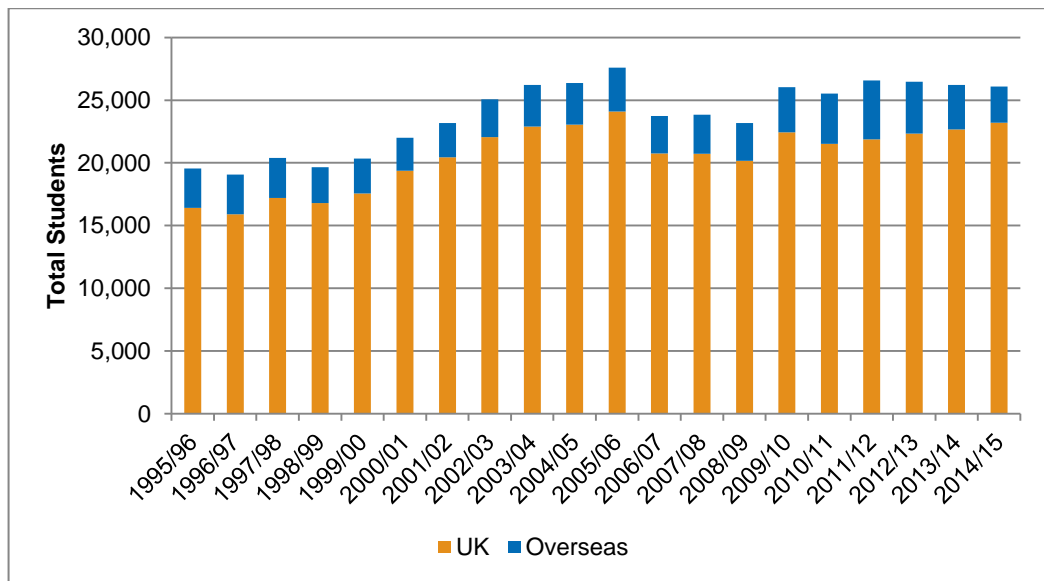
Source: HESA, 2016

3.30   The student population of Belfast is likely to influence demographic trends in the City, particularly regarding migration of key student age groups (15 – 19 and 20 – 24). It is important to recognise that migration trends within these age groups will not solely be driven by students, however, with the data also including people migrating to or from the area for other reasons. This is particularly relevant when considering the flow of international migrants, where those moving for work could form an important component of all moves within these age groups.

3.31   Figure 3.14 considers internal migration flows within NI, focusing on the changing net flow of these age groups to Belfast over the period from 2001 to 2014. This highlights a sustained net inflow of people aged 15 to 19 from elsewhere in NI, which has increased over the most recent two years (2012 – 2014). However, most years have also seen a net outflow of those aged 20 to 24 to other areas of NI – albeit generally smaller in scale than the corresponding net inflow of younger migrants – which is likely to at least partially include students completing their studies and moving home or elsewhere. It is notable that two years within this period (2001/02 and 2002/03) saw a net inflow of residents of this age group, although this has not been seen in any year since.

Figure 3.14: Net Internal Migration – age 15-19 and 20-24
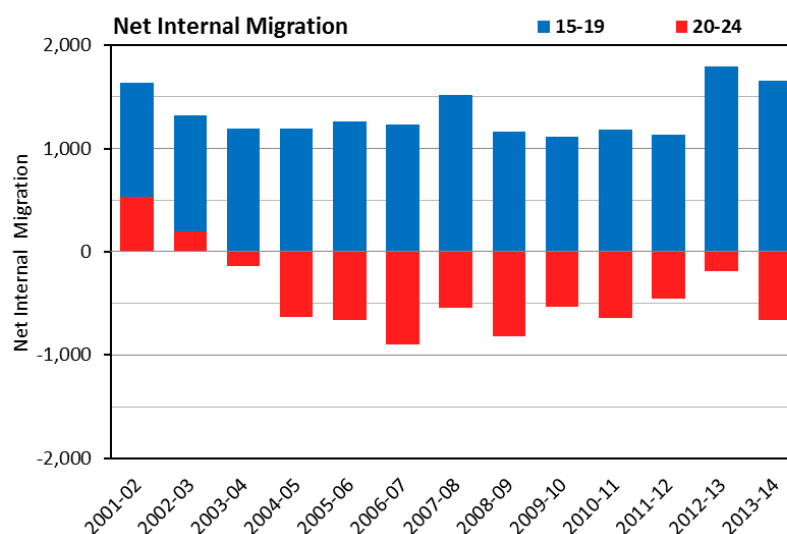
Source: NISRA, Edge Analytics, 2016

3.32   A similar chart is shown below for Great Britain (GB) migration for the same age groups, showing that there has largely been a net outflow of migrants of this age to the rest of the UK. 2008/09 is the only year where there was a net inflow of migrants of this age to Belfast, with the net outflow accelerating over the latest three years.

Figure 3.15: Net Migration with GB – age 15-19 and 20-24
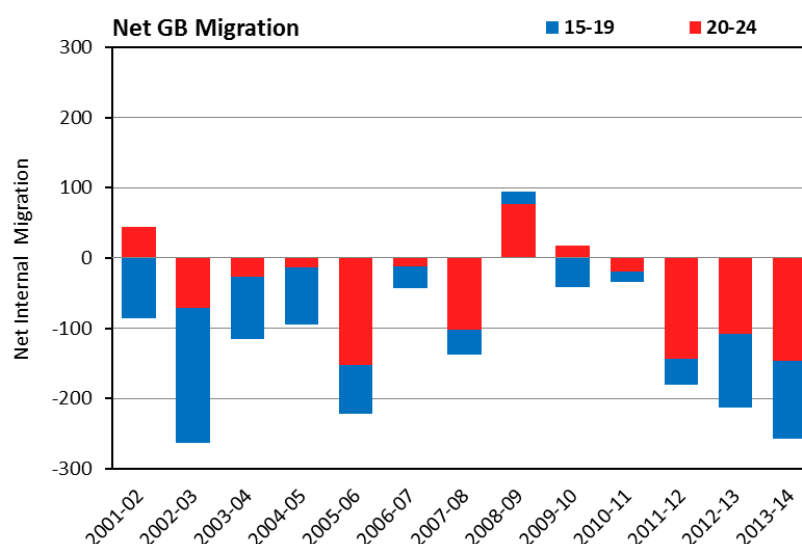
Source: NISRA, Edge Analytics, 2016

3.33   Finally, the net flow of international migrants within these age groups is presented in the following chart. This shows that there has been a sustained net inflow of international migrants aged 15 to 19 and a general net outflow of those aged 20 to 24. However, the period from 2005 to 2010 was characterised by a sustained net inflow of younger

international migrants in both age groups, with this diverging from the trend seen prior and since.

Figure 3.16:   Net Overseas Migration – age 15-19 and 20-24
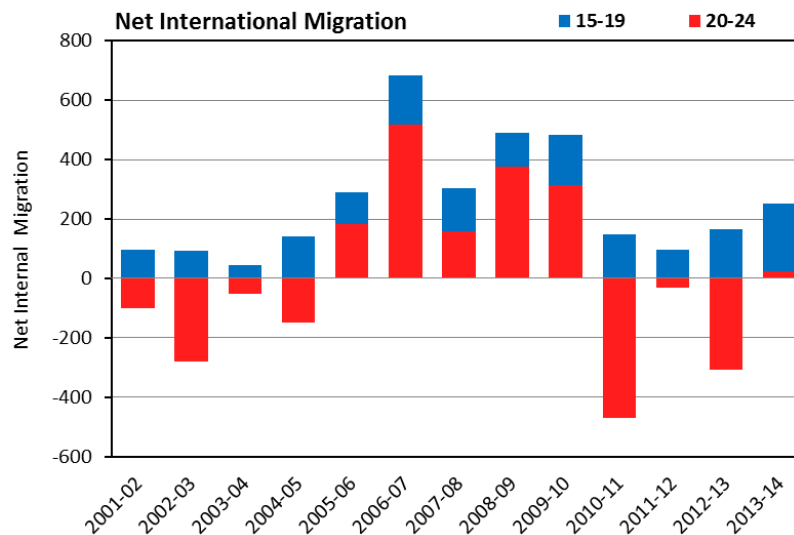
Source: NISRA, Edge Analytics, 2016

3.34   Collectively, it is apparent that Belfast has seen a net outflow of those aged 20 – 24 to other parts of NI as well as to GB. This contrasts with a net inflow of those aged 15 – 19 from other parts of NI albeit an outflow to GB. This would suggest that whilst Belfast attracts a sizeable student-aged population – particularly from other areas in NI – it has not to date succeeded in retaining this element of the population.

3.35   In terms of international migration, this is also true over more recent years with a strong net outflow of those of likely graduate age despite a sustained inflow of those aged 15 – 19.

3.36   It is also notable that the net inflow of those aged 15 – 19 over the period shown has not coincided with a period of growth in this age group, with Figure 3.4 showing that the number of residents of this age has actually declined since 2001. This is likely to reflect a combination of demographic factors, principally related to the ageing of different population groups over time and their impact on the structure of the population. The net inflow of residents of this age does not compensate for the cumulative effect of a continued net outmigration of those aged under 14. In addition, the strong outflow of older working age groups – who are most likely to have children – is also likely to contribute towards this effect.

Population Projections

3.37   While the analysis above presents historic demographic evidence for Belfast, this also provides context when considering projected change in the city's population. This section presents and analyses the official population projections developed by NISRA, and also considers the implications of variant demographic trends which – if sustained – could lead to a variant profile of future population growth in Belfast.

Official Population Projections

3.38 In May 2016, NISRA published the 2014-based sub-national population projections (SNPP). These represent the most up-to-date official projections of population growth at LGD level.

3.39 Figure 3.17 illustrates the projected change in the population of Belfast using this dataset, relative to the now superseded 2012-based dataset. Historic population change is also shown on the chart in order to compare the projections with past trends.

Figure 3.17:   2014-based and 2012-based SNPP – Belfast 2014 - 2035
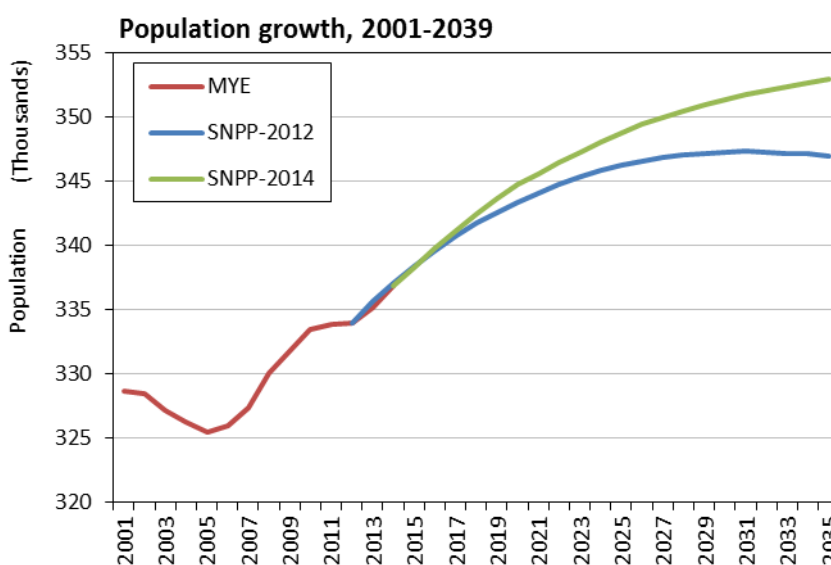
Source: NISRA, 2016

3.40 It is evident that the latest official population projection (2014-based) suggests a continuation of the more recent levels of population growth seen over the past eight years until around 2020. Beyond 2020, the rate of projected growth is anticipated to reduce over the longer-term, although growth is suggested to be sustained to 2035.

3.41 This projection of growth is more positive than the preceding 2012-based SNPP dataset, which anticipated a slower trajectory of growth from 2017 and a flat-lining of population change and a return to a picture of decline beyond the end of the next decade.

3.42 The more positive picture of growth under the latest 2014-based dataset is more likely to reflect in part the strong growth seen in the two years prior to 2014. This contrasts with the period preceding the 2012-based projections, which included a two year period where there was little growth in the population of Belfast as a result of a comparatively negative migration picture.

3.43 In terms of the individual components of change, the data underpinning both the 2012-based and 2014-based projections has been compared by Edge Analytics, highlighting that:

- In terms of the key assumptions informing the projections of natural change, the two projections use similar assumptions in relation to projected births and deaths;

- The key differentiator between the different projections of growth between the two dataset is related to assumptions driving projected net migration. The 2014-based dataset projects a reduced net outflow from Belfast to other parts of NI than the preceding 2012-based dataset albeit it is noted that both projections project a continued net outflow; and

- On the basis of data currently available, it is considered that an important determining factor behind higher net migration assumptions within the 2014-based SNPP dataset compared to the 2012-based projection is the higher national projection of net migration in the comparative national datasets to which the sub-national projections are constrained.

3.44   Comparing projected change in Belfast's population against other LGDs in Northern Ireland under the latest 2014-based dataset provides important context on the relative scale of population growth in the city. The following chart indexes population growth in each of the LGDs from 2014.

Figure 3.18:   Indexing Projected Population Growth in NI LGDs 2014 – 2035
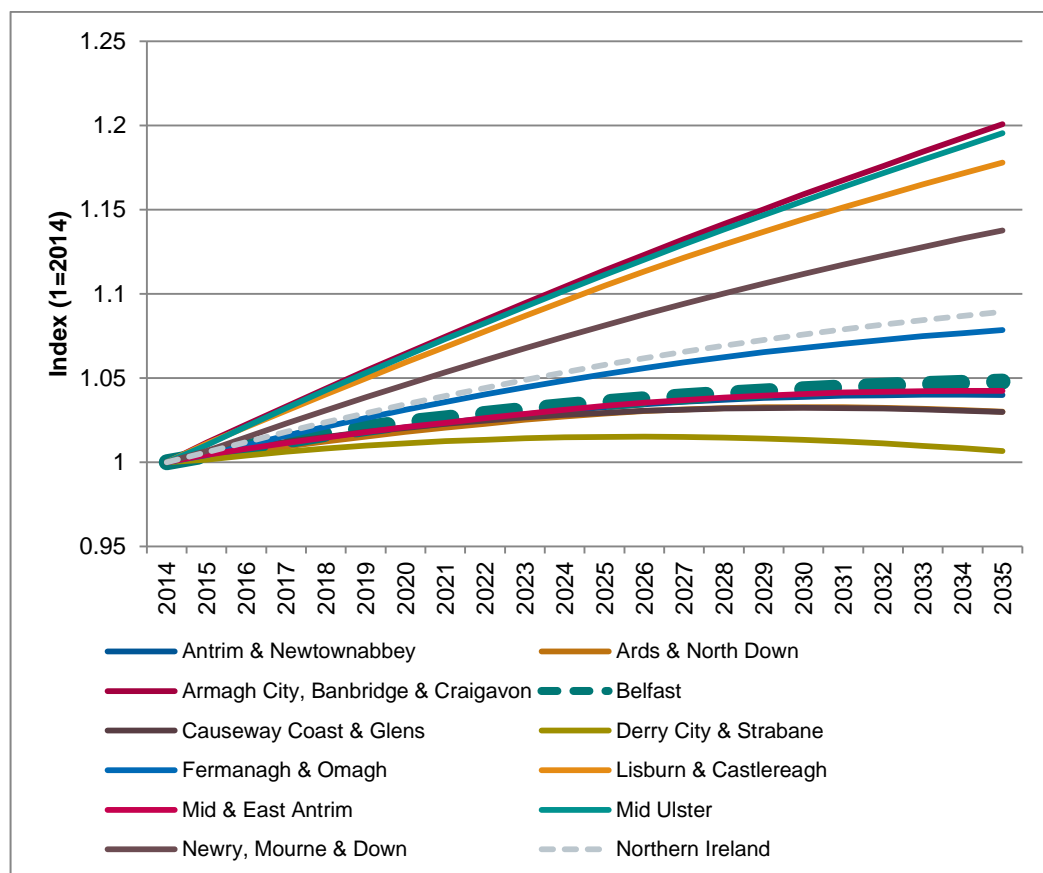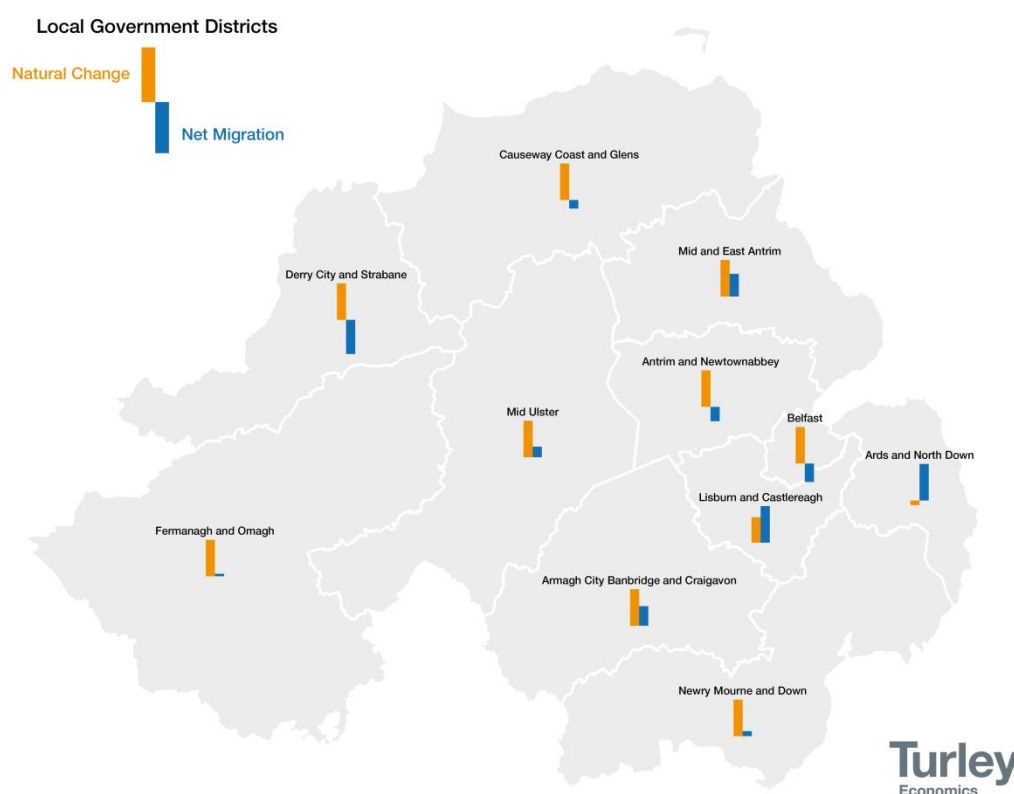

Source: NISRA, 2016

3.45   It is clear that the rate of population growth in Belfast is projected to be lower than the average growth for NI under this dataset, and falling below areas such as Armagh City,

Banbridge and Craigavon and Mid Ulster where population growth is projected to accelerate and surpass the national growth rate.

3.46   The projected population change in each of the LGDs is driven by different factors. The following plan shows the impact of both natural change and migration in driving population change over the period from 2014 to 2035.

Figure 3.19:   Projected Components of Population Change in LGDs 2014 – 2035

Source: NISRA, 2016; Turley, 2016

3.47   Almost all LGDs are expected to see natural growth in the population over the period from 2014 to 2035, with births outnumbering deaths in all areas except Ards and North Down. Here, population growth will be principally driven by net in-migration, which is a relatively common feature amongst eastern LGDs. There is, however, a net outflow of migrants expected in Belfast, Antrim and Newtownabbey, which will partially offset the natural population growth projected in these areas.

3.48   It is interesting to note that Lisburn and Castlereagh is projected to experience strong population growth as a result of both natural change and migration. As the analysis in section 2 identified, the 2011 Census indicated that this LGD had a significant net inflow of people from Belfast during the year preceding the Census. The projected differences in net migration under the 2014-based SNPP imply that this trend is anticipated to continue within the dataset.

3.49   Whilst the analysis above provides important spatial context on the distribution of growth in NI, it is also useful to contrast the projected change in the population of Belfast with

other cities in the UK. Building upon the analysis presented at Figure 3.2, the following chart compares projected change in the population of Belfast and a sample of UK cities, which are viewed by the Council as useful comparators due to their respective population sizes. This is based on the latest sub-national population projections published for each city[18].

Figure 3.20:   Projected Population Growth in Belfast and UK Cities 2014 – 2035
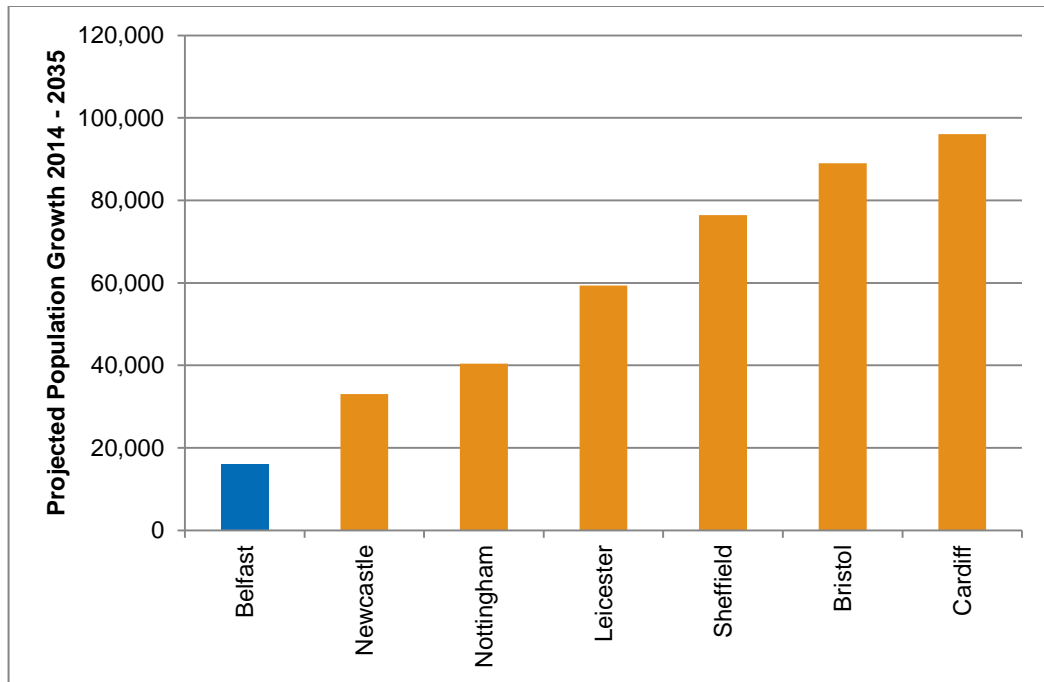
Source: NISRA, ONS, StatsWales

3.50   In absolute terms, Belfast is projected to see the lowest absolute level of growth of the cities presented over the period from 2014 to 2035. This is also evident when considering proportionate growth, as shown in the following graph, which indexes population growth to cities' respective 2014 population. This clearly demonstrates the slower rate of growth projected in Belfast compared to other cities, with Cardiff, for example, expecting the population to grow by over one quarter over the period shown.

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[18] 2014-based in Belfast and English cities; 2011-based in Cardiff

Figure 3.21:   Indexed Projected Population Growth in Belfast and UK Cities 2014 – 2035
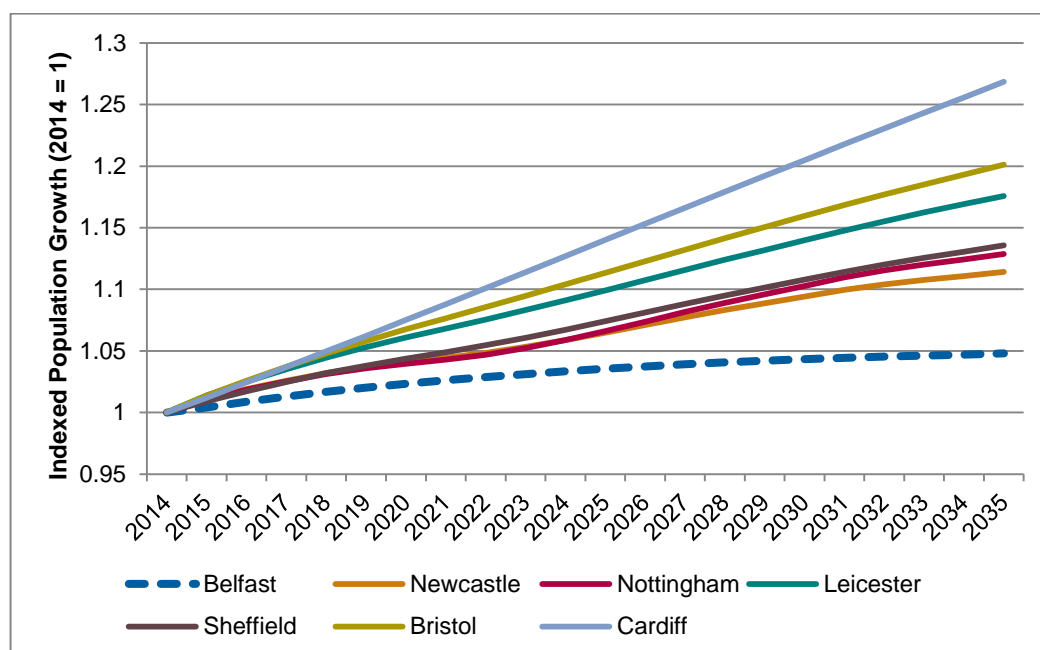
Source: NISRA, ONS, StatsWales

Variant Demographic Projections

3.51   The analysis throughout this section has identified a degree of volatility in the population of Belfast over recent years. This is reflected within the official projections presented above, which are sensitive to the historic period from which trends are derived given that their assumptions are primarily based on demographic evidence over the five years preceding the base date. For example, the latest 2014-based SNPP largely reflect trends since 2009.

3.52   On this basis, understanding the implications of longer and shorter term past growth (PG) trends provides important context. A series of variant demographic projections for Belfast have therefore been developed by Edge Analytics using the POPGROUP suite of software.

3.53   POPGROUP is widely used by local authorities and private sector users to support Local Plan development across the UK. POPGROUP is also used by NISRA in the development of its LGD population and household projections. The model developed by Edge Analytics integrates the latest available demographic data provided by NISRA. A full set of input assumptions and an overview of the modelling methodology are included at Appendix 2.

3.54   The variant demographic scenarios developed by Edge Analytics are summarised below:

   • **PG-13yr** – future population growth is based on a 13-year history of migration (2001/02 to 2013/14) which provides a view on the likely population growth based on a longer term trend;

- **PG-5yr** – future population growth is based on a 5-year trend in migration (2009/10 to 2013/14) which is the standard time-period on which statistical agencies base their projections;

- **PG-2yr** – future population growth is based on a 2-year trend in migration (2012/13 to 2013/14) which provides an important alternative given the recent changes in the impact of migration on population growth;

- **Natural Change** – internal and international migration is set to zero; population growth is determined by births and deaths only; though hypothetical, this scenario is a useful illustration of the importance of migration for Belfast's population;

- **SNPP-2012** – for comparison with the latest 2014-based SNPP, a scenario that replicates the previous 2012-based SNPP is also presented.

3.55   Figure 3.22 illustrates the differing trajectories of population growth resulting from these variant projections. The historic population data for Belfast is also included for context.

Figure 3.22: Projected Population Change – variant trend-based projections (2014 – 2035)
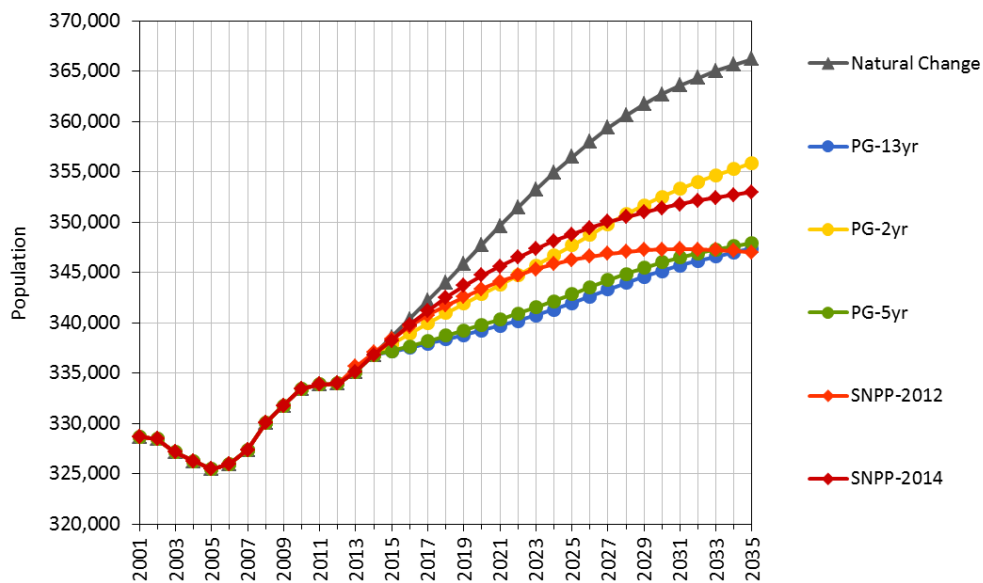
Source: Edge Analytics, 2016

3.56   It is apparent that the modelled projections using POPGROUP provide a broad range of alternative demographic based projections. Whilst the 2014-based NISRA projections are stated as being based upon an historic five year trend, it is evident that the POPGROUP model using a comparable period (PG-5yr) suggests a lower level of potential population growth. The POPGROUP scenario appears to more closely reflect the 5 year period, noting for example the comparatively limited change in population over the three years from 2010 which falls within this historic period.

3.57   In part at least, the higher level of projected growth in the 2014-based SNPP dataset is likely to be associated with the need to constrain growth to a Northern Ireland level, with this driven in the latest dataset by higher levels of assumed migration from outside NI. It is likely that Belfast has been the assumed recipient of a greater proportion of this additional migration, reflecting its' current demographic make-up and its economic role within NI.

3.58   The POPGROUP scenario which draws trends from the last two years (PG-2yr) shows a greater consistency with the NISRA 2014-based SNPP dataset, reaffirming the points above which noted that the NISRA dataset appears to maintain the more recent trends in population change. Whilst the NISRA 2014-based projection suggests a slowing of growth beyond the next ten years, the POPGROUP scenario in contrast suggests that growth will be sustained, resulting in a larger population by the end of the projection period in 2035.

3.59   By the end of the projection period (2035), the 5 year and 13 year PG scenarios developed through POPGROUP suggest a comparable level of population growth to the 2012-based SNPP dataset published by NISRA. It is interesting to note that the trajectory of growth differs, however, with the POPGROUP scenarios suggesting a more sustained picture of growth compared to the NISRA projection which suggests growth is primarily driven in the short-term.

3.60   A scenario in which migration is assumed to be neutral has also been developed by Edge Analytics, which assumes that population growth is solely driven by natural change factors. As expected – based on the analysis of migration trends in section 2 of this report – this scenario suggests a much stronger level of population growth, with the historic trend of net out-migration assumed to be fundamentally changed. It is important to recognise that this scenario is hypothetical and is not based upon an evidenced position. It is presented only to illustrate the important role of migration in the changing population of Belfast.

Implications for Future Household Growth and Housing Need

3.61   Future growth in the population will drive changes in the number of households in Belfast, generating a need for housing in the city. The latest official 2014-based projections released by NISRA have not been converted into household growth or implied dwellings needed at the time of writing. Equally, the latest projections have not been translated into Housing Growth Indicators (HGIs) by NISRA, and it is understood that there is currently no intention to undertake this exercise. On this basis, the latest available HGIs are based on a lower level of population growth than suggested within the most recent population projections.

3.62   In order to inform the development of future policy around housing provision, it is necessary to convert the projections of population growth into households and subsequently the potential number of dwellings required to occupy these households. This involves two stages:

- First, the population is converted into households through the application of **household formation rates**, based on the age of the head of household; and

- The number of households is then converted into an estimated number of dwellings by making an allowance for **vacancy and second home ownership**.

3.63 The key assumptions relating to the translation of projected population growth into households and dwellings are considered further in Appendix 3. Based on these assumptions, the POPGROUP model has been used to convert the population growth scenarios presented in this chapter into households and indicative dwelling figures. The outputs of this exercise are summarised in the following table.

Figure 3.23: Projected Growth in Population, Households and Dwellings (2014 – 2035)

	Change 2014 – 2035				Average per year	
	Population change	Population change %	Household change	Household change %	Net migration	Dwellings (6.6% vacancy)
Nat change	29,365	8.7%	18,438	12.9%	0	940
PG-2yr	19,024	5.6%	13,830	9.7%	-610	705
SNPP 2014	**16,147**	**4.8%**	**12,555**	**8.8%**	**-788**	**640**
PG-5yr	11,100	3.3%	10,341	7.2%	-921	527
PG-13yr	10,556	3.1%	10,122	7.1%	-1,062	516
SNPP-2012	9,945	3.0%	9,785	6.8%	-1,062	499

Source: Edge Analytics, 2016

3.64 Applying the latest available household formation rate assumptions (2012-based) to the latest 2014-based population growth projection produced by NISRA – with a vacancy rate of 6.6% – suggests a need for 640 dwellings per annum in Belfast between 2014 and 2035, or 13,440 dwellings in total over this period. This is driven by a 4.8% growth in population and an 8.8% growth in households, but does not take account of any conversion, closures or demolition of stock.

3.65 The variant demographic scenarios developed by Edge Analytics, however, suggest a wider range of housing need and household growth. While the Natural Change scenario suggests the highest level of growth, this is a hypothetical scenario – as noted above – and as such it is suggested that no weight is given to its outcomes. Excluding this scenario, the analysis suggests a growth of between circa 10,000 and 14,000 households under the PG-13yr and PG-2yr scenarios respectively.

3.66 It is also important to note that all of the scenarios developed by Edge Analytics suggest a level of household growth which exceeds that projected under the 2012-based SNPP scenario developed by NISRA, which – as noted previously – was used to inform the latest HGI for Belfast.

Implications of Variant Household Formation Rates

3.67 In converting the population into households at Figure 3.24 above, the household formation rate assumptions applied by NISRA in their production of the 2012-based

SNHP have been used. At a national level, as noted at Figure 3.9, it is clear that the long term fall in the average household size in NI has been moderated over more recent years, which could be linked to a range of factors including worsening housing affordability and a slowdown in housing supply.

3.68 The 2012-based SNHP broadly continues this recent historic trend at a national level over the short-term with a more rapid return to falling household sizes over the longer-term, as shown in the following chart. In order to enable comparisons the chart benchmarks Belfast against the national and England profile.

Figure 3.24: Projected Change in Household Size Belfast City, Northern Ireland and England
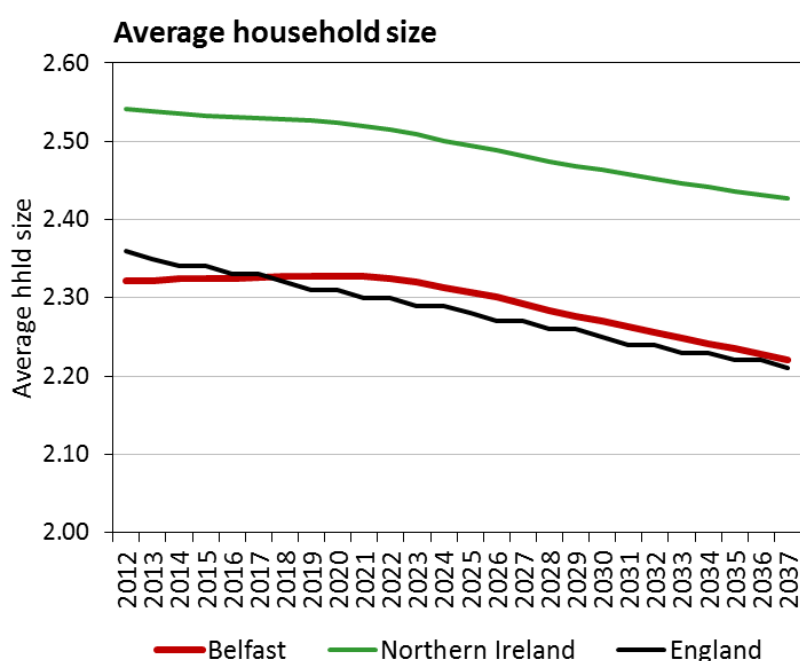
Source: NISRA, ONS, 2015

3.69 It is apparent that whilst NI as a whole has a larger average household size, Belfast more closely aligns with the average seen in England in terms of the absolute levels of household size. However, it is also important to consider the trajectory of change. Both NI and England are projected to see a continued fall in household size from 2012 to 2037. In contrast, Belfast is projected to see its household size increase until around 2021 before following a trend which is more closely aligned to both England and NI.

3.70 This has an implication for the comparative rate of household membership rates for the population of Belfast when compared with the national projections in NI and England.

3.71 The projected change in household size is underpinned by assumptions around the comparative propensities of households of different ages to form (referenced in the NISRA household projections as Household Membership Rates). Detailed local data relating to these aspects of the dataset is not currently available from NISRA.

3.72 The analysis of the housing market in Belfast compared to other parts of NI demonstrated comparable affordability issues and a notable fall in development rates in the context of planned supply and forecast levels of need. This will have potentially impacted upon the ability of households to form, particularly influencing younger households. In this context, the assumed increase in household size within the projections over the next 6 years or so may reflect a continuation of trends which are unduly affected by the impact of a recent undersupply of homes and worsening affordability.

3.73 In order to understand the impact of this issue further, a sensitivity has been modelled by Edge Analytics which applies alternative membership rates to evaluate the impact of changing household size in Belfast in line with the national trend for NI from the 2012-based household projections, thereby assuming a sustained fall in household size as opposed to a temporary elevation or stagnation. This is illustrated in the following chart.

Figure 3.25: Modelled Household Size Adjustment for Belfast
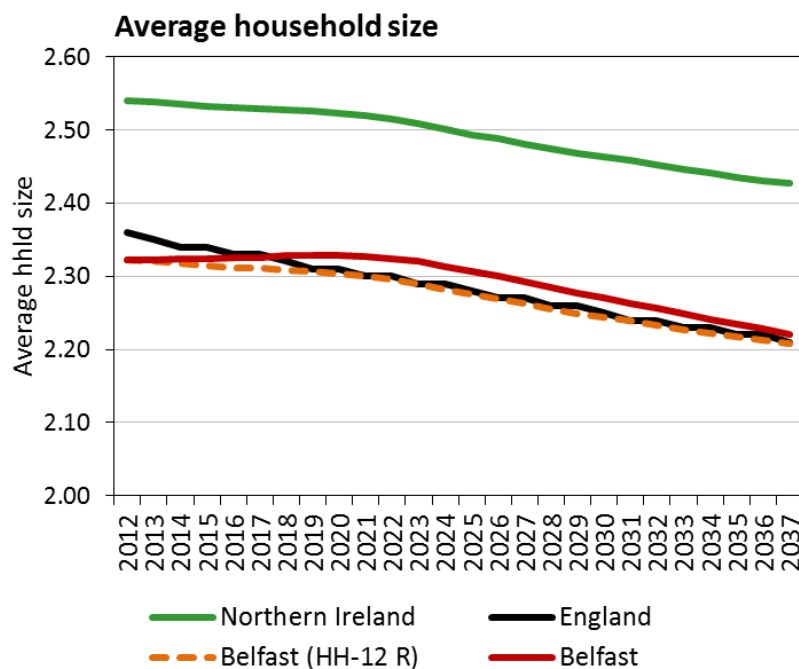
Source: Edge Analytics, 2016

3.74 Applying this adjustment increases the level of household formation associated with the projected growth in population, thereby increasing the number of dwellings needed to accommodate the growing population. The impact of this adjustment on both the 2014-based SNPP and PG-2yr scenarios is summarised in the table below, highlighting that the adjustment increases the number of dwellings needed annually by circa 12 – 13%.

Figure 3.26: Impact of Household Formation Rate Sensitivity

	Dwellings per annum 2014 – 2035 (6.6% vacancy)		
	Core	**Sensitivity**	Change
SNPP 2014	640	**725**	13%
PG-2yr	705	**791**	12%

Source: Edge Analytics, 2016

3.75   It is considered that the application of this adjustment presents a positive response to a recognised recent undersupply of housing and the potential implications this has had on the ability of households – particularly younger households – to form in Belfast.

Summary and Implications

3.76   It is evident that Belfast has seen a sustained and significant long-term decline in population, although this trend has reversed over more recent years with the city entering a period of population growth since 2006. While the rate of growth has been relatively variable over this period – linked to a range of factors, not least the rate of new housing development – the latest year of population data shows that the population grew markedly between 2013 and 2014 to reach 336,830 persons.

3.77   Since 2001, natural change has played an important role in growing the population, although the levels of migration have been more variable. Belfast saw a significant and sustained net outflow of people to other parts of NI prior to 2008, although the scale of this flow has since significantly reduced. Over the period from 2006 to 2009, this was also supplemented with a strong net inflow of international migrants and a positive net inflow from other parts of Great Britain. Natural change has been the primary driver of growth over the past two years, with migration – both internal and international – largely balanced.

3.78   It is apparent that the latest 2014-based population projection published by NISRA anticipates a stronger level of population growth over the longer term than the preceding 2012-based dataset. Assumptions around migration represent the key area of difference between the two projections, and in this context is important to recognise that the latest HGIs published by NISRA are based on the lower, 2012-based population projection. It is understood that no update is planned to take account of the more recent official population projection.

3.79   While the scale of population growth projected in Belfast under the latest 2014-based projection is higher than the preceding official dataset – and would represent a clear reversal of its long-term population decline – it continues to assume that the city's population will grow at a slower rate than projected for NI as a whole, with a number of LGDs expected to see stronger rates of population growth. The scale of growth projected in Belfast is also limited in the context of comparable UK cities.

3.80   In order to consider the implications of deriving future trends from different historic periods, a range of variant demographic projections have been modelled by Edge

Analytics using the POPGROUP suite of software. Importantly, all of the variant projections produced suggest a higher level of population and household growth in Belfast than the 2012-based SNPP published by NISRA, which was used to develop the latest HGIs for NI.

3.81   It is also evident that the latest 2014-based SNPP project a level of growth which exceeds that implied by longer term historic trends. This provides a closer alignment to recent demographic change over the past two years in particular. Indeed, a demographic scenario which bases its trends on the last two years – developed by Edge Analytics – suggests a more sustained population growth over the full projection period, therefore indicating a slightly higher level of population growth by 2035 compared to the official 2014-based SNPP published by NISRA.

3.82   This has implications for the number of households likely to form in Belfast over the emerging plan period to 2035, based on the latest 2012-based household projections published by NISRA and linked to projected changes in average household size. Applying these assumptions – and allowing for vacancy – suggests a need for 640 dwellings per annum to support the scale of population growth projected under the latest 2014-based SNPP dataset. This increases to 705 dwellings per annum if the more recent two year population growth trend is sustained to 2035.

3.83   This level of housing need is influenced by assumptions on household formation rates, as published by NISRA within their latest 2012-based household projections. These assumptions are largely trend-based, with the historic period from which they are derived influenced by worsening market conditions which has nationally suppressed the formation of younger households in particular. Adjusting these rates to align with a projected national trend of reducing household size elevates the number of homes needed to accommodate the population. This suggests a need for 725 dwellings per annum under the 2014-based SNPP, increasing to 791 dwellings per annum under a more recent two year past growth population trend.

4. Economic Context

4.1   In understanding the future need for housing, it is important to establish the relationship between population change and the availability of employment opportunities, although this dynamic is complex.

4.2   This section initially profiles Belfast's changing economy, considering its relationship with migration given that the previous section highlighted how the movement of people in and out of Belfast changed the city's population and influenced the resultant need and demand for housing.

4.3   BCC has commissioned Ulster University (UU) to identify a range of likely economic growth scenarios for Belfast, the outputs of which are presented in this section. These will form an important component of the evidence base for the emerging LDP and therefore provide context for understanding future housing need. Further information around the development of these economic scenarios will be set out in subsequent publications relating to the economic evidence base by BCC and UU. It will be important that the emerging messages from the analysis in this section are monitored and updated in the context of further analysis and research prepared by UU.

4.4   The second part of the section considers the implications of the changing demographic profile projected under the official population projections in the context of the forecast growth in employment opportunities. This highlights the potential impact of a continuation of current demographic trends – including the ageing of Belfast's population and a sustained outflow of younger residents – on the scale of the future labour-force available to support economic growth.

Historic Employment Growth

4.5   Belfast has historically generated employment growth, with the latest baseline forecasts produced by UU[19] showing that total employment in the city grew by 15% between 2001 and 2014. The relative strength of the Belfast economy is likely to have influenced the historic demographic trends identified in section 3 of this report.

4.6   As shown in the following chart, there has been a relatively consistent picture of employment growth over this period, with a contraction in 2008/09 preceding a return to growth, with the exception of 2011/12. Over the full period presented, an average of circa 2,510 additional jobs were created annually between 2001 and 2014, at an average growth rate of 1.1% per annum. However, a higher rate of 3,190 jobs per annum was achieved prior to the recession (2001 – 2008), at an average rate of 1.5% per annum.

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[19] Ulster University (Spring 2016) Economic Forecasts for Belfast City Council

Figure 4.1:   Change in Employment in Belfast 2001 – 2014
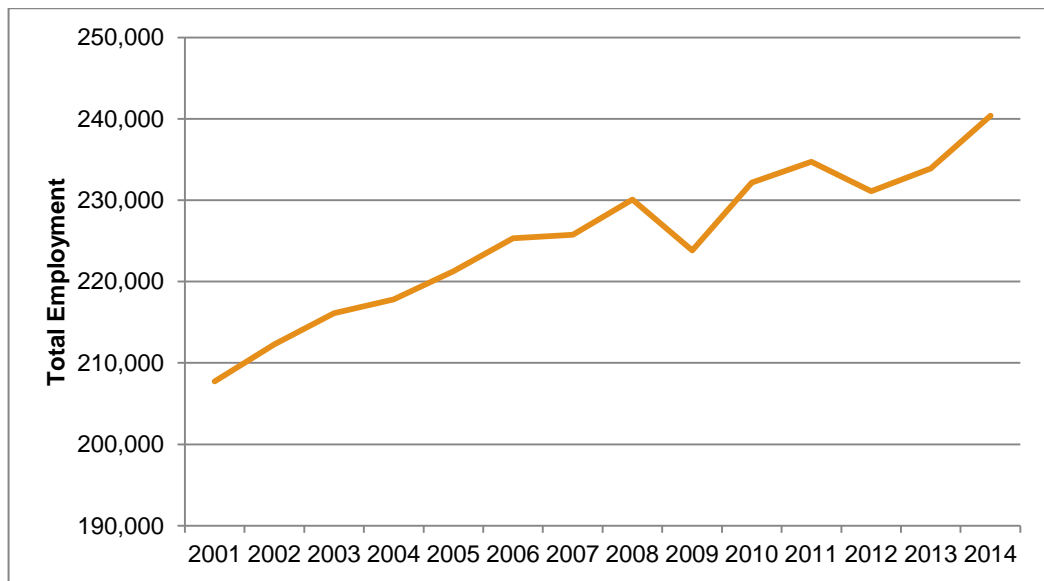
Source: Ulster University, 2016

4.7   It is notable that the comparatively strong growth in jobs between 2001 and 2008 coincided with a falling population. This suggests that employment growth was supported by other means, such as changing commuting dynamics, declining unemployment or changes to economic participation. However, the limited availability of historic data for the new Belfast LGD restricts a further analysis of these factors.

4.8   It is, however, also important to note that the strong employment growth since 2009 – in contrast with other parts of NI – is likely to be a factor influencing the falling levels of net out-migration from Belfast to other areas in NI over this period. This is illustrated at Figure 4.2, with a linear trend line also presented.

Figure 4.2:   Net Migration to Belfast from NI 2001 – 2014
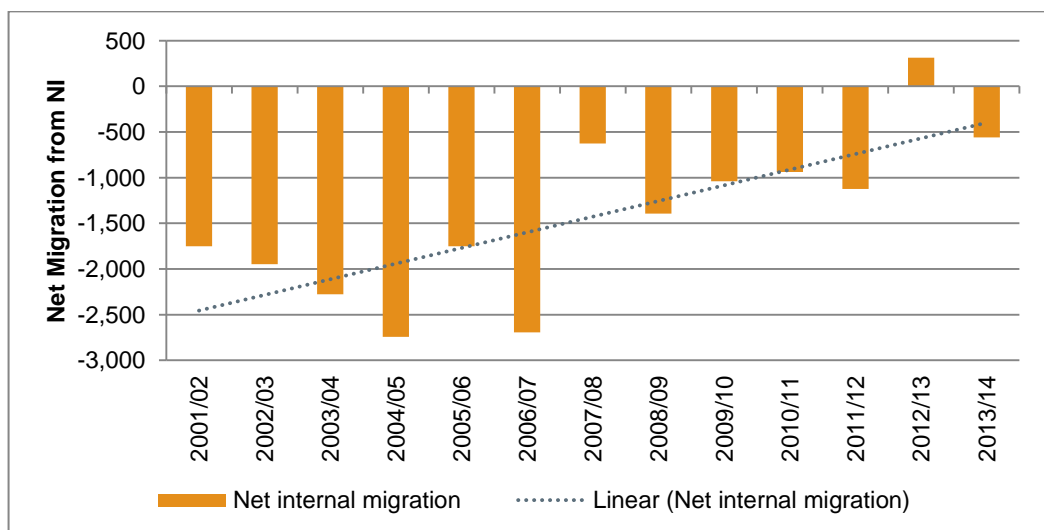
Source: NISRA

Ulster University Economic Forecasts

4.9   Economic forecasts for Belfast have been prepared for BCC by UU, in order to enable an understanding of future change in the local economy. This analysis is based on the Spring 2016 forecast produced by UU, which includes a baseline economic forecast as well as a higher growth scenario ('upper') within the context of a national macro forecast for the NI economy. These scenarios are summarised within this section.

Baseline Scenario

4.10   The baseline scenario was developed by UU to provide an indication of the most likely economic outcomes for the Northern Ireland economy and Belfast over the period to 2030. As shown in the following chart, this scenario would result in sustained growth in Belfast's economy over the longer term, with approximately 33,675 additional jobs created between 2014 and 2030. When extrapolated to cover the emerging plan period for Belfast[20], circa 46,430 additional jobs could be created between 2014 and 2035 under this scenario, increasing total employment in the city by around 19% or 0.8% per annum on average. In absolute terms, the annual creation of around 2,210 jobs per annum falls slightly below historic levels of job growth (2,510 jobs per annum) recorded annually between 2001 and 2014.

Figure 4.3:   Baseline Scenario – Change in Total Employment
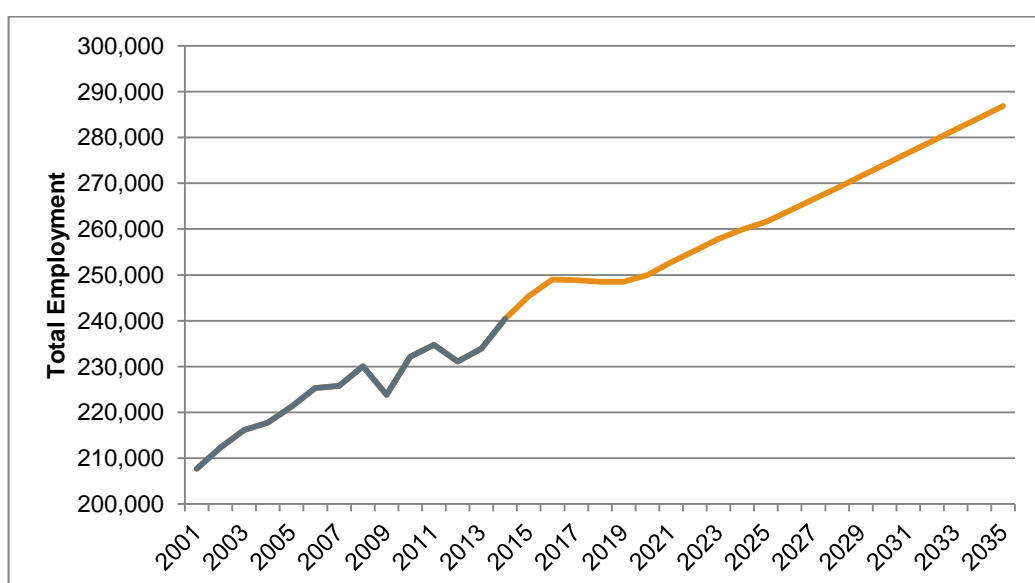
Source: Ulster University, 2016

4.11   Forecast change in the population is taken into account and recognised within the UU model, with a growth in both the working age and total population inherent within the model. This applies assumptions on economic activity, unemployment, commuting and migration, with assumptions on the latter understood to deviate from the official projections produced by NISRA.

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[20] Extrapolated by applying absolute growth in employment in the final year of forecasts (2029/30) to subsequent years to 2035

4.12   Indeed, as shown in the following table, the assumption that the working age population modestly grows over the period to 2030 contrasts with the assumptions in the latest 2014-based SNPP produced by NISRA, which anticipate a decline in the number of working age residents in Belfast. This also influences the overall scale of population growth forecast over this period, although the assumptions applied continue to imply that the working age population will form only a small component of future population growth in Belfast. Nevertheless, this suggests that even baseline levels of job growth in Belfast are predicated upon a higher level of population growth than projected under the official NISRA 2014-based SNPP dataset.

Figure 4.4:   Baseline Scenario – Change in Total and Working Age Population

	Change in Total Population 2014 – 2030	Change in Working Age Population (16 – 64) 2014 – 2030
UU Baseline	**19,320**	**1,983**
NISRA	14,566	-3,995

Source: Ulster University, 2016

Upper Scenario

4.13   An upper scenario has also been developed by UU, which shows the implications of a higher level of economic growth. Again, this is derived from a macro-level NI forecast, which assumes that higher growth is achieved through:

- Reduction in corporation tax;

- Increase in employment rate to more closely align with the current UK employment rate;

- Stronger growth in higher value added and export potential areas of the economy, including ICT, professional services and manufacturing;

- Lower but appropriate levels of growth in supporting sectors such as retail, hospitality, construction and transport; and

- Less significant reduction in spending on public sector services, due to an increased tax base associated with increased private sector growth.

4.14   As shown in the following chart, these assumptions uplift the level of job creation which could be achieved in Belfast over the forecast period, with circa 53,100 additional jobs created over the period from 2014 to 2030. Again, when extrapolated to 2035, this suggests that approximately 68,800 additional jobs could be created in Belfast, at an average rate of 3,275 jobs per annum. This is comparable to the level of growth recorded prior to the recession (3,190 jobs per annum), but would evidently require a sustained continuation of this strong growth over a longer term period. Proportionately, total employment would increase by around 29% over the emerging plan period, with annual growth of 1.2% on average. It is notable that this is only slightly higher than the

proportionate annual growth rate seen since 2001 (1.1%), and indeed falls slightly below the proportionate growth rate seen prior to the recession (1.5%).

Figure 4.5:   Upper Scenario – Change in Total Employment
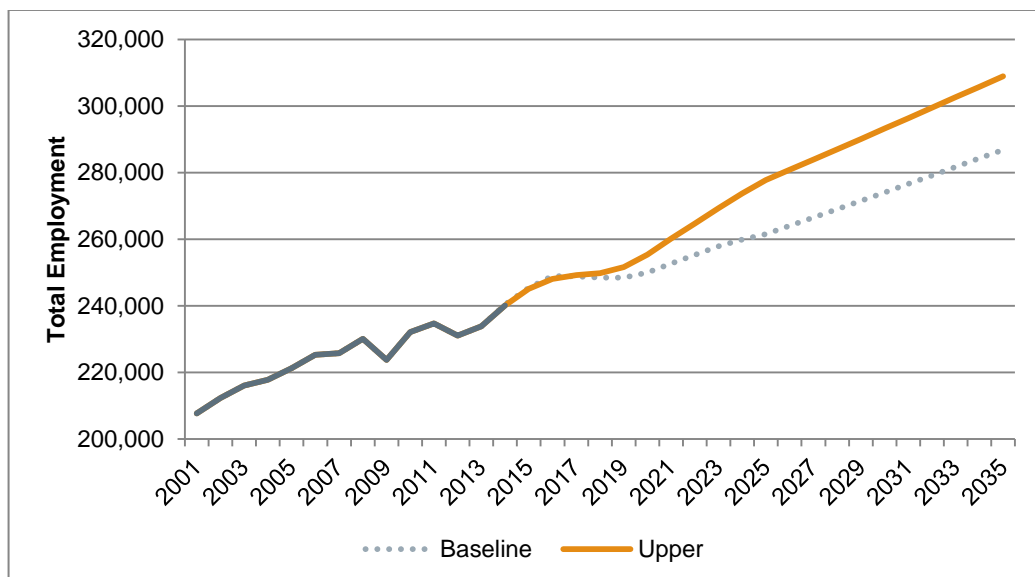
Source: Ulster University, 2016

4.15   As shown in the following table, population is one of the key areas of difference between the two forecasts, with the upper scenario assuming a higher level of growth in the working age and total population over the forecast period to 2030. This represents a further deviation from the NISRA 2014-based SNPP, which is an important consideration in establishing the need for housing to support a growing economy in Belfast.

Figure 4.6:   Upper Scenario – Change in Total and Working Age Population

	Change in Total Population 2014 – 2030	Change in Working Age Population (16 – 64) 2014 – 2030
UU Upper	**21,919**	**4,346**
UU Baseline	19,320	1,983
NISRA	14,566	-3,995

Source: Ulster University, 2016

Implications of a Changing Labour-Force

4.16   The creation of additional jobs is intrinsically linked to the availability of a suitably sized labour-force. It is therefore important to understand the scale of projected demographic change in the labour-force in Belfast over the emerging plan period.

Changing Age Profile

4.17   The population of Belfast is projected to change over the long-term as a result of both natural change factors and migration. The charts below show the population age pyramids for males and females in Belfast in both 2014 and 2035 under the 2014-based SNPP.

Figure 4.7:   Population Pyramids Belfast 2014
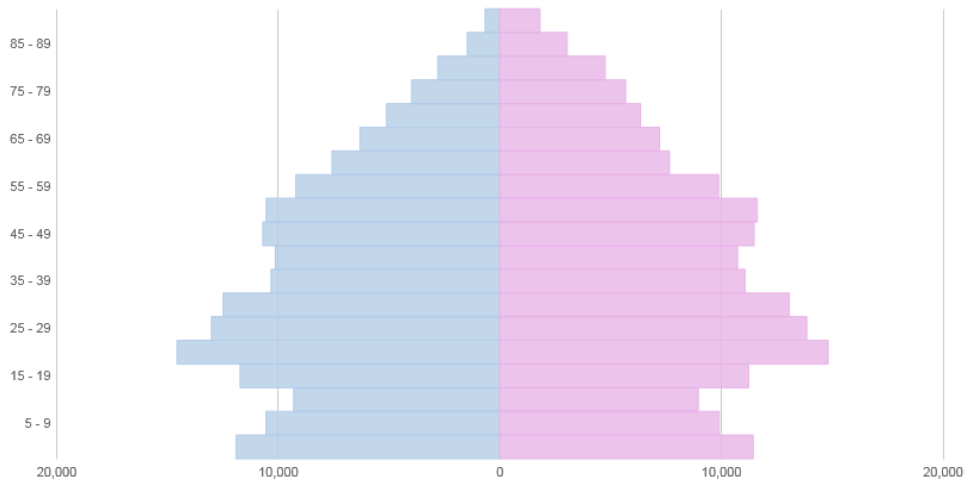
Source: NISRA, 2016

Figure 4.8:   Population Pyramids Belfast 2035
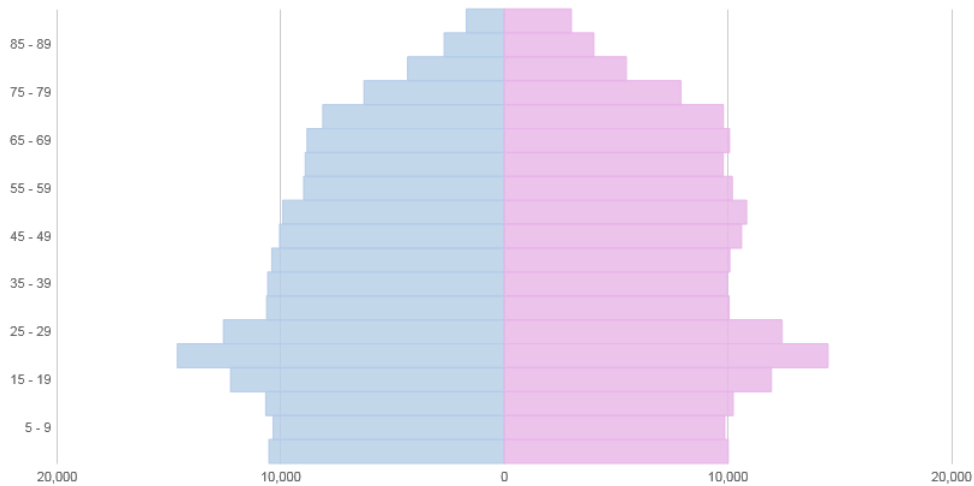
Source: NISRA, 2016

4.18   The following chart aggregates change in males and females to show the total projected change in different age groups over the period from 2014 to 2035, under the 2014-based SNPP dataset published by NISRA.

Figure 4.9:   Projected Change in Population by Age Group 2014 – 2035
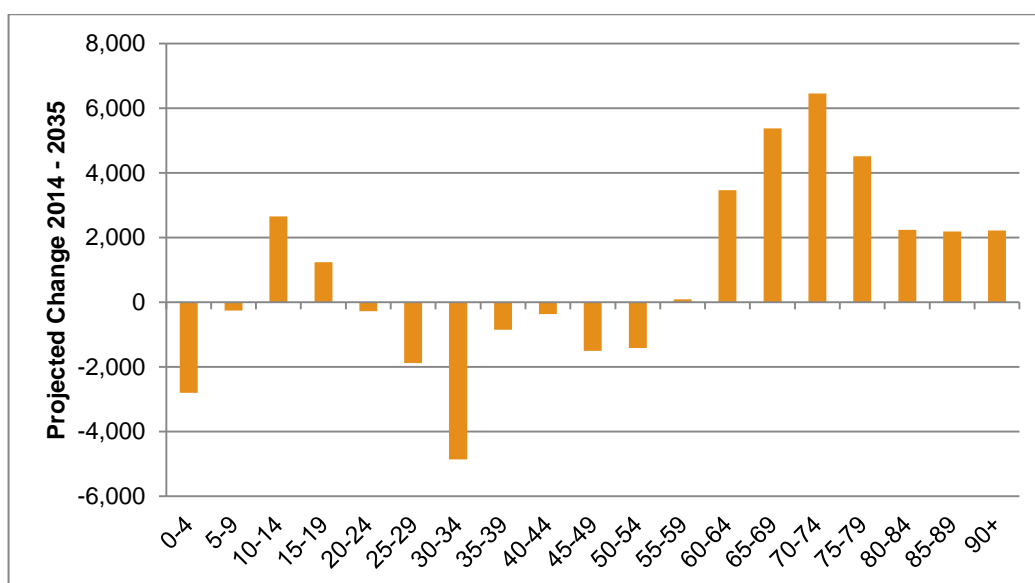
Source: NISRA, 2016

4.19   The 2014-based SNPP evidently projects a significant ageing of the population of Belfast, with a significant increase in the number of residents in older age groups. This will be accompanied by a relatively significant reduction in the number of working age persons. Collectively, this will serve to elevate the dependency ratio, which is the ratio of working age persons to groups outside of the labour-force.

4.20   As shown in the population pyramids, the projections continue to expect a concentration of residents aged 15 to 29 in Belfast, with this continuing to reflect the significant number of students within the city who are attracted to study as well as its comparative economic role within NI.

4.21   The ageing trends identified above were also prevalent within the preceding 2012-based SNPP, as shown in the following chart. However, it is notable that the latter projected a slightly larger growth in the older population than the latest 2014-based dataset suggests, and a more marked reduction in the younger working age population. This is illustrated in the following chart.

Figure 4.10: Projected Change in Age Profile – 2014-based and 2012-based SNPP
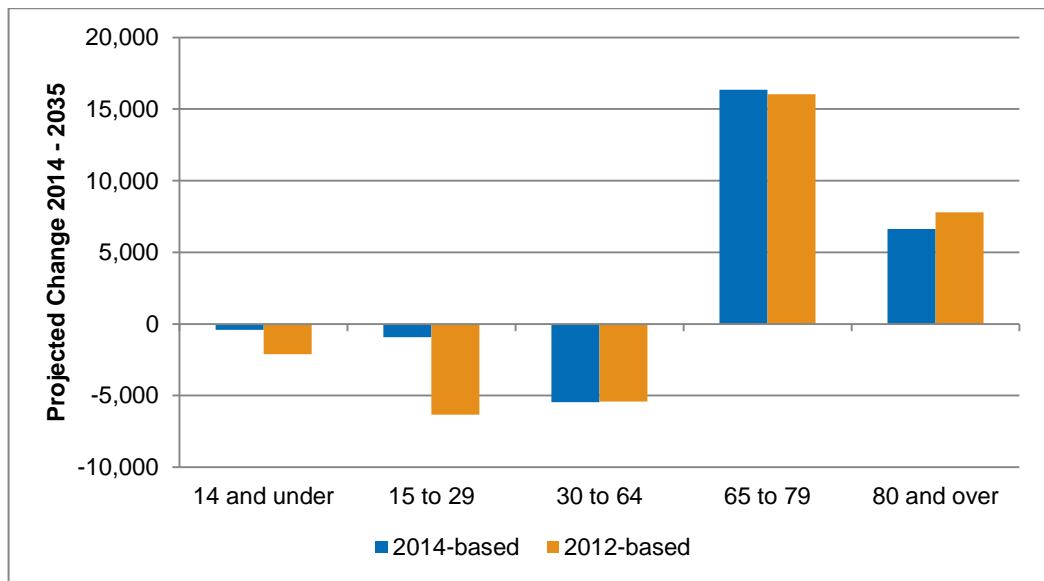
Source: NISRA, 2016

4.22   This suggests that the latest projection implies a more balanced growth in the population than the preceding dataset, which has implications not only for the changing size of the labour-force but also the size and type of housing which may be required.

4.23   While assumptions around natural change are a factor in the projected change in the age profile of Belfast, migration also plays an important role. Given that migration assumptions are predominantly trend-based, it is beneficial to understand the historic profile of net migration by age in Belfast. The following chart where migration has had a net positive or negative impact on the number of the city's residents in different age groups.

Figure 4.11: Average Annual Net Migration by Age 2004 – 2014
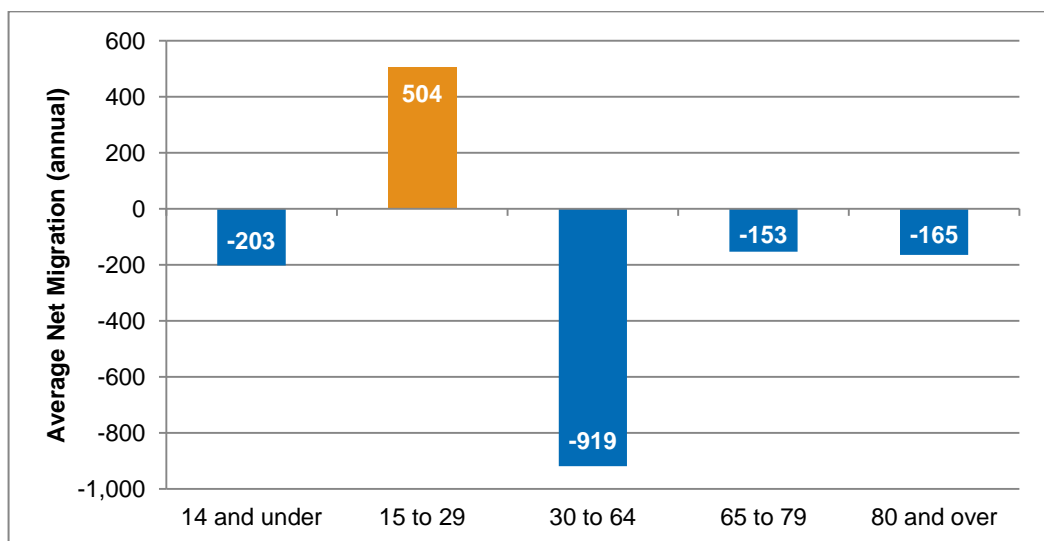
Source: NISRA, Edge Analytics, 2016

4.24 The analysis above shows that the net outflow of residents from Belfast has been historically driven by those aged 30 to 64. This evidently has an impact upon the changing age profile of the city, and forms an important consideration with regard to the future balance of the city's population.

Modelling Labour-force Changes

4.25 The implications of a changing population on labour-force can be estimated through POPGROUP. In order to estimate the size of the labour-force and the number of jobs supported, the model requires assumptions on three key factors, namely:

- **Unemployment** – an average unemployment rate of 6.2% has been derived from the last two years (2013 – 14) of statistics available from the Labour Force Survey (LFS);

- **Economic activity rates** – baseline economic activity rates by age group and sex have been derived from 2011 Census statistics. Economic activity rates for all age groups have then been adjusted to change in line with the Office for Budget Responsibility (OBR) labour market analysis[21]; and

- **Commuting** – a commuting ratio of 0.61 has been derived from 'Travel to Work' statistics from the 2011 Census. This therefore assumes a continuation of a significant inflow of labour into Belfast from other parts of NI.

4.26 There is evidently a significant level of uncertainty involved in projecting forward labour-force behaviour. However, the assumptions set out above provide a robust baseline position to initially understand how the labour-force may change, based on a broad continuation of recent trends.

4.27 Figure 4.12 shows the projected changes to the size of the labour-force in Belfast – and the scale of employment growth which could potentially be supported as a result – under the official 2014-based SNPP and the variant PG-2yr scenario.

Figure 4.12: Projected Change in Labour-Force/Supported Employment (2014 – 2035)

	Labour force (16 – 75+)				Average annual employment growth
	2014	2035	Change	% change	
PG-2yr	160,111	159,684	-427	0%	-31
SNPP-2014	160,111	157,111	-3,000	-2%	-221

Source: Edge Analytics, 2016

4.28 Based on the application of a set of labour-force behaviour assumptions, it is evident that that there is a risk that a continuation of historic demographic trends could diminish the size of the labour-force in Belfast, relative to the current position. This largely reflects

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[21] Office for Budget Responsibility (2014) Fiscal Sustainability Report

the ageing demographic trend identified earlier in this section, given that older age groups – who are expected to account for a substantial proportion of overall population growth in Belfast – are less likely to contribute towards economic growth, based on the reasonable labour-force assumptions applied. A continuation of this demographic trend, therefore, could limit the growth of the local economy, and fail to support the level of employment growth forecast by UU.

Variant Employment-led Projections

4.29   The analysis above shows that a continuation of recent demographic trends is unlikely to support forecast levels of employment growth in Belfast without fundamental changes to labour-force behaviour and economic participation. It is therefore important to understand how growth in the overall population could support growth in the labour-force.

4.30   Using the POPGROUP model, this can be estimated through the development of two additional 'employment-led' scenarios by Edge Analytics which constrain future population growth to the scale of job growth forecast by UU. This retains the assumptions set out above in relation to labour-force behaviour on economic activity and commuting, but applies:

  •   An unemployment rate assumption which seeks to broadly align with the UU forecasting model in this regard by assuming that 10% of additional jobs created are taken by unemployed residents[22]; and

  •   An allowance for people holding more than one job ('double jobbing')[23].

4.31   Based on these assumptions, the scale of population growth that may be necessary to support both the baseline and upper scenarios of employment creation in Belfast can be compared against the 2014-based SNPP dataset published by NISRA and the variant PG-2yr scenario developed by Edge Analytics.

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[22] This reduces the base unemployment rate (6.2%) to 3.9% by the end of the forecast period under the baseline scenario, and to 3.0% under the upper scenario
[23] It is assumed that a fixed proportion of the labour-force (3.2%) hold more than one job based on a ten year NI average (2006 – 2015) from the Annual Population Survey (APS)

Figure 4.13: **Comparing Employment-led and Demographic Population Growth 2014 – 2035**
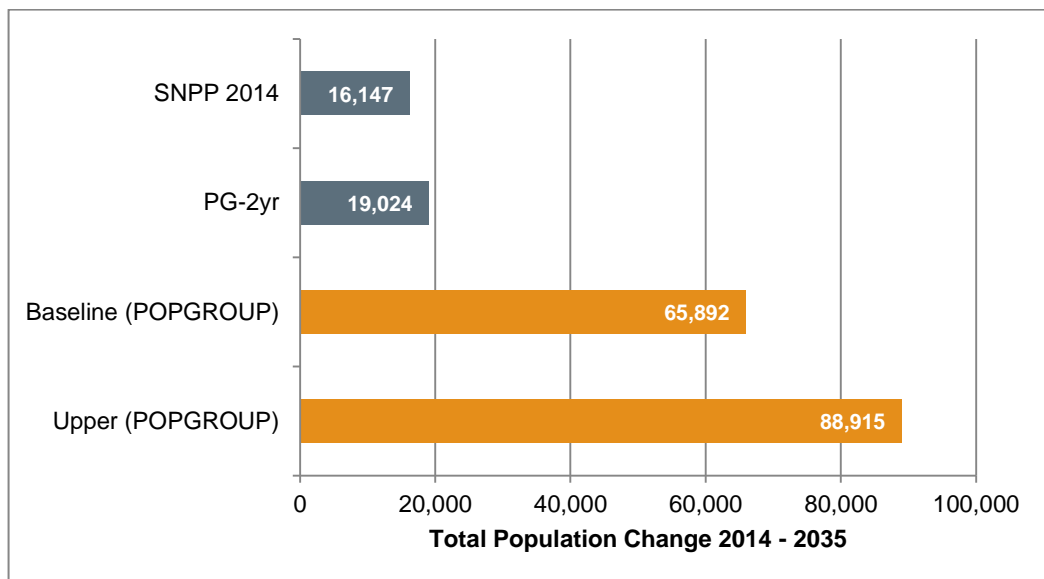
Source: NISRA; Edge Analytics modelling based on Ulster University forecasts

4.32   It is evident that the employment-led scenarios developed through POPGROUP imply that the population of Belfast would need to grow considerably to support both baseline and upper scenarios of employment growth on the basis of the modelled labour-force behaviour assumptions, surpassing the level of growth which is projected to occur based on past demographic trends. This reflects a modelled assumption that the labour force would need to grow substantially through growth in the working age population assumed through elevated levels of migration into Belfast. The age profile of projected growth is therefore important to consider in understanding the variance between the demographic and employment-led scenarios. This is illustrated in the following chart.

Figure 4.14:   Projected Change in Age Profile within Employment-led and Demographic Scenarios 2014 – 2035
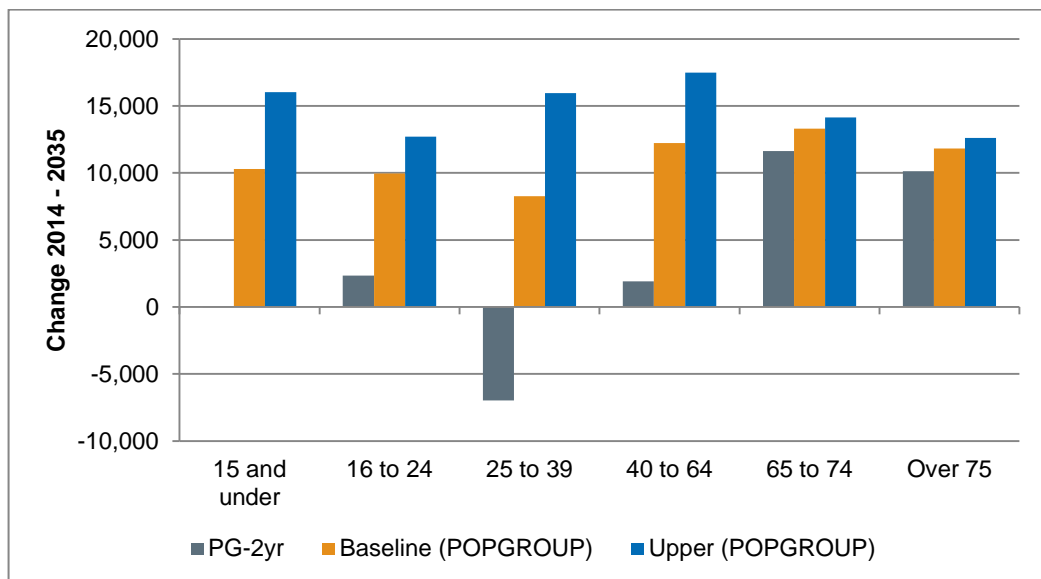
Source: NISRA; Edge Analytics modelling based on Ulster University forecasts

4.33   While the PG-2yr scenario projects a decline in the number of younger working age residents (25 – 39), the employment-led scenarios are predicated upon a sizeable growth in the working age population in order to grow the labour-force. As noted above, this is 'resolved' within the modelling through a reversal of historic net outflows of migration from Belfast, as considered in section 3. This also indirectly grows the number of younger residents aged 15 years and under, reflecting assumed fertility rates amongst the enlarged working age population. There is a more limited change in the scale of growth projected in the older population, however, reflecting the more limited contribution expected to be made by these age groups towards supporting economic growth in Belfast.

4.34   Without population growth of this scale, the POPGROUP scenarios indicate that forecast economic growth may not be supported by an available labour-force, without significant changes to labour-force behaviour. This is largely reflective of the ageing population projected under the trend-based projection.

4.35   The POPGROUP modelling applies a 'constraint' to the projections of population growth which is linked to the scale of annual job growth within the UU forecasts. In balancing job growth and labour-force growth, a set of labour-force assumptions are applied in the modelling as set out at paragraphs 4.25 and 4.30.

4.36   Figure 4.6 highlights that the UU forecasting model also makes its own internal assumptions around the relationship between job growth and population change. The UU model runs only to 2030, and therefore the following chart compares the scale of growth projected over this period (as set out in Figure 4.6) to the outputs of the POPGROUP employment-led modelling scenarios constrained to this shorter time period.

Figure 4.15:   Comparing Employment-led Population Growth 2014 – 2030
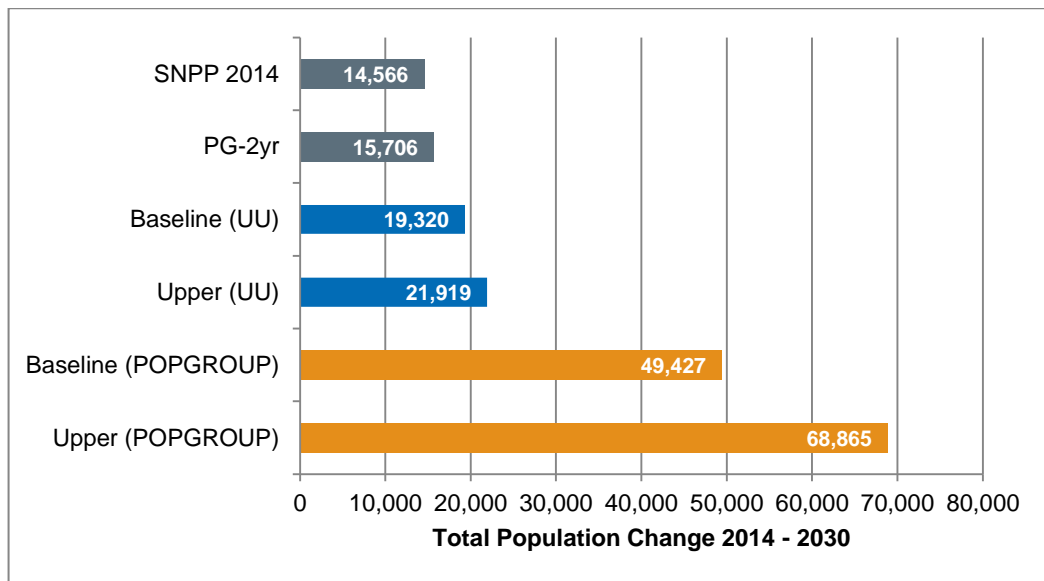
Source: NISRA; Edge Analytics; Ulster University

4.37   The two models suggest that notably different levels of population growth will be necessary to support the scale of job growth forecast by UU. The differences are due to the different labour-force assumptions used within each of the models, and the allowance for change in economic activity rates, unemployment and commuting. Evidently, forecasting each of these elements over a long-term plan period inherently creates a level of uncertainty.

4.38   Figure 4.16 shows the assumed growth in the working age population (16 – 64) assumed under the two different models. This should be considered in the context of the job growth forecast under the baseline scenario (33,675 jobs) and the upper scenario (53,100 jobs) over the same time period.

Figure 4.16: **Comparing Employment-led Population Growth (16 – 64) 2014 – 2030**
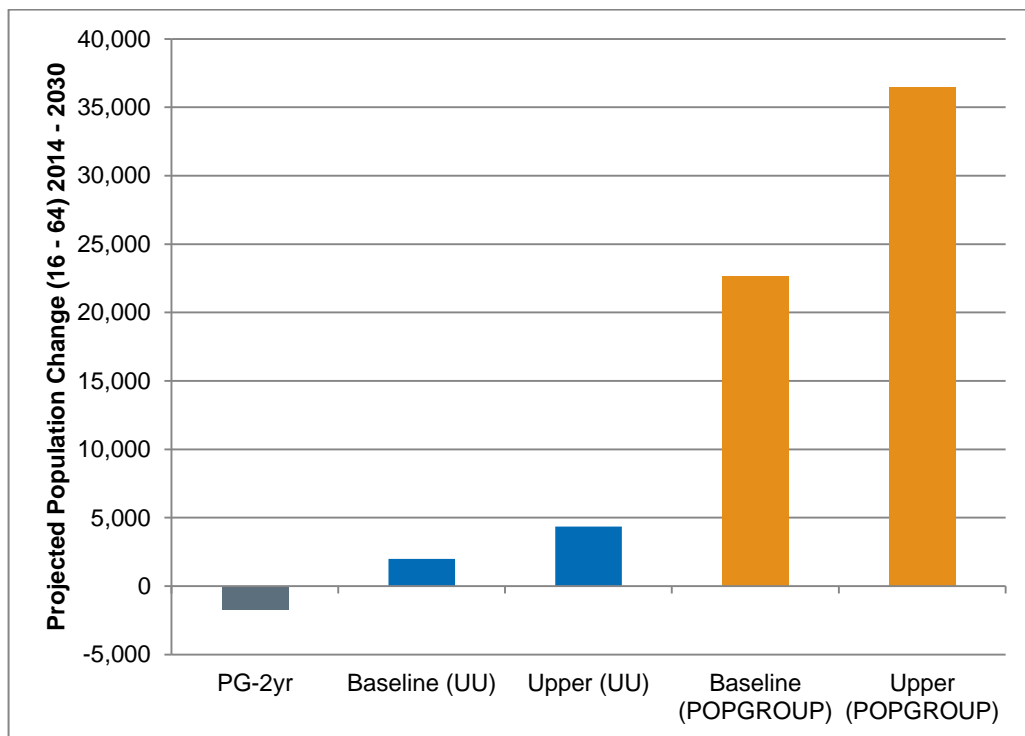
Source: NISRA; Edge Analytics; Ulster University

4.39 The POPGROUP scenarios suggest that a significant growth in the working age population may be necessary to support forecast employment growth, recognising that currently this age group is the key source of labour. Whilst significant, this level of growth falls below the projected growth in jobs as the modelling assumes a contribution of people returning to work and the economic activity rates of older groups in particular increasing. By contrast, the UU modelling implies that only a limited growth in the working age population is required to support job growth of over 33,000 and 53,000 respectively under each of the scenarios.

4.40 The detailed employment or economic activity rates and commuting assumptions applied within the UU model are not available to inform this study. However, the scale of difference between the modelled working age population growth and job growth suggests that the modelling assumes a number of changes in relation to labour-force behaviour which are more pronounced than those used through the POPGROUP modelling.

4.41 While the precise cause of this deviation cannot be accurately isolated using the information made available by UU, the assumptions applied through POPGROUP are known, and on this basis the deviation is likely to reflect a combination of the following factors in particular:

- **Increased economic participation**, reflected in changes to economic activity rates which could move beyond the OBR adjustments applied through POPGROUP. This would lead to the existing population making a greater

contribution towards supporting job growth, thereby reducing the assumed need for migration – and therefore population growth – to sufficiently grow the labour-force; and

- **Modest changes to commuting levels**. While UU has confirmed that the 2011 Census commuting rate has been initially applied in their model, it has also confirmed that some modest adjustments are applied in later years to account for the overall strength of the labour market. The assumed increase in Belfast residents taking jobs has been applied by UU to reflect increased urbanisation and city living, in common with patterns seen in other UK cities. The extent to which this affects the overall commuting ratio into Belfast is unknown, however. Longer-term changes to the rate of the working population commuting in and out of Belfast will have implications for other areas of NI and therefore represents a policy response to the city's employment growth which requires further consideration beyond the assessment presented in this report. This differs from the conservative POPGROUP assumptions, where the commuting rate is held fixed at its 2011 Census position which – outside of policy factors being determined – is considered a prudent assumption.

4.42   It is evident that the scale of population growth necessary to support likely job growth is highly sensitive to the assumptions applied in relation to labour-force behaviour. Equally, however, it is recognised earlier in this section that there is a significant degree of uncertainty in forecasting future changes to labour-force behaviour. This is considered further later in this report.

4.43   It is equally important to recognise that growth in the working age population represents only one component of the total population change projected under each of the scenarios presented above. Both the UU and POPGROUP scenarios also assume that a growth in the working age population concurrently generates growth in other age cohorts, namely children aged 15 and under and older people aged 65 and above. The scale of this growth is more marked within the POPGROUP scenarios, as shown at Figure 4.14 and compared with Figure 4.6[24]. This reflects the influence and scale of growth projected within the working age population. In simple terms, this results from an assumed ageing of workers attracted or retained to support Belfast's economic growth, and the additional children living in households with working age residents. This does, however, serve to compound and further elevate the level of population growth suggested as being necessary to support likely economic growth in the city under the POPGROUP modelling when compared to the UU model.

Summary and Implications

4.44   It is evident that the Belfast economy has historically performed well, with growth in total employment which was particularly marked between 2001 and 2008. This pre-recessionary period of growth coincided with a continued fall in population, impacting on

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[24] Figure 4.6 indicates that within the UU forecast the vast majority of additional population growth assumed between the NISRA forecast and the employment-led forecasts is made up of those aged 16 – 64. This contrasts with the POPGROUP modelling which whilst showing a larger increase in those aged 16 – 64 also shows a much higher associated growth in those aged under 15 and a more modest uplift compared to the NISRA forecasts for those aged 65+. This reflects an assumption that the migration profile associated with supporting employment is reflective of historic trends and not simply associated with working age-persons moving to fill employment. It also recognises the ageing of new working age migrants retained or attracted to Belfast and their propensity to have children.

the movement of labour in and out of Belfast as well as a potentially changing demographic profile which reflected a comparatively youthful population. However, it is also evident that the economy continued to create new jobs post-recession, contrasting with other parts of NI. This period notably saw a decline in the scale of net out-migration from Belfast, which could be influenced by the availability of employment opportunities. The relationship between population and employment growth is, however, complex.

4.45   Economic forecasts have been prepared for Belfast by Ulster University (UU), with the most likely economic outcome ('baseline') suggesting the sustained creation of circa 2,210 jobs annually between 2014 and 2035 which falls slightly below the levels of growth achieved historically since 2001. A higher growth scenario ('upper') has also been developed, however, which suggests that growth of circa 3,275 jobs per annum could be achieved over the same period. This would represent a return to pre-recession levels of employment growth, sustained over a long-term plan period.

4.46   The creation of additional jobs in Belfast is dependent upon the availability of a suitably sized labour-force. Within this context, it is notable that a continuation of historic demographic trends – reflected in the 2014-based SNPP developed by NISRA – would lead to a significant ageing of Belfast's population, resulting in a contraction in the number of working age persons. The city's strong demographic profile – which has been characterised by a comparatively youthful population and therefore strong growth in relation to natural change factors (births outnumbering deaths) – is projected to be increasingly offset by a continuation of Belfast's recent demographic history, which has seen a sustained net outflow of working age residents.

4.47   A continuation of these trends would therefore impact upon the size of the city's labour-force, and indeed the modelling presented in this section suggests that the labour-force could diminish. This allows even for reasonable future changes in economic activity rates amongst the existing labour-force.

4.48   This suggests that a continuation of past growth trends would not grow the labour-force sufficiently to support forecast economic growth, without substantial and unprecedented changes to future labour-force behaviour. Supporting likely job growth will therefore require a further growth in the population, with the POPGROUP modelling developed by Edge Analytics suggesting that a significantly higher level of population growth would be necessary relative to the demographic growth projections presented in section 3 of this report. This is underpinned by higher levels of net in-migration to Belfast, which could be achieved through both a reduction in the outflow of existing working age residents and an increased attraction of new residents to the city.

4.49   This is based on reasonable and conservative assumptions on future change in labour-force behaviour, including an assumption that 10% of additional jobs created are taken by unemployed residents. It is, however, evident that the scale of population growth that may be necessary to support forecast economic growth is highly sensitive to the assumptions applied. Indeed, the UU forecasting model itself contains a population component, which suggests that a smaller growth in population – which nevertheless continues to surpass the official NISRA and PG-2yr scenarios presented in the preceding section – could support the forecast levels of job creation under both the baseline and upper scenarios. Beyond the unemployment assumption applied

consistently in both models, the assumptions applied in arriving at the UU model's conclusions are not known, although the difference between the modelling outcomes is likely to reflect a combination of an assumed increase in economic participation and a modest change to future levels of commuting. This serves to lower the number of additional residents required in Belfast to grow the labour-force and support future economic growth.

5. Potential Growth Scenarios

5.1 Through the analysis of the drivers of future housing need in Belfast, a number of important factors have been identified:

- The baseline official demographic projections are likely to underestimate needs, reflecting the historic period upon which they are based and in particular migration assumptions and household formation rates;

- There is an apparent risk that planning to accommodate population and household growth as projected under the official datasets may result in a changing population profile which will not support anticipated employment growth in Belfast without further increasing the proportion of people commuting into the city; and

- Supporting the higher levels of job growth through successful policy intervention and investment would exert a greater pressure on the labour-force, which in turn will require a greater retention or attraction of working age residents to grow the labour-force.

5.2 Taking the above factors into account, this section presents three potential scenarios of growth which directly draw from a number of the scenarios presented in sections 3 and 4 of this report.

Scenario 1: Adjusted Demographic Growth

5.3 The latest 2014-based population projection published by NISRA provides a trend-based demographic starting position. This anticipates a higher level of population growth than the preceding 2012-based dataset, which underpins the Housing Growth Indicators (HGIs) previously produced by NISRA.

5.4 The updated 2014-based projection does, however, continue to assume that the population of Belfast will grow at a slower rate than the rest of NI, with the scale of growth also limited in the context of comparator UK cities. Recognising the variation in historic demographic trends over recent years, it is also evident that a continuation of more recent growth trends over the past two years (PG-2yr) would lead to a higher level of growth than implied by the 2014-based official projection.

5.5 The past two years have been characterised by more positive and improving migration trends, with a declining net outflow of residents and a continued growth in employment. However, the rate of new housing development in Belfast over recent years has remained suppressed, and there is a risk that the trend-based level of population growth projected could be constrained by this suppressed historic growth trend. A continuation of this demographic trend would be also unlikely to yield significant growth in the labour-force, with a significant risk that the ageing population will be unable to support job growth in the city. This suggests that future employment growth could only be supported through significant changes in labour-force behaviour, including a fall in unemployment, changes to economic participation and a changing commuting dynamic. The extent to which such fundamental changes could realistically occur is uncertain, resulting in a risk

that a continued historic trend of employment growth is put at risk as a result of a lack of available local labour. Should employment growth be sustained but the working age population reduce, as projected under this scenario, the likely outcome would be a further reliance on jobs being filled by people commuting into the district from other areas.

Scenario Implications

Adjusted Demographic Growth

19,000
Additional residents
2014-2035
356,000 total population in 2035

17,000
Additional homes needed
2014-2035
800 dwellings per annum

Employment
Limited or no growth in labour force supported

Migration
Limited reduction in net migration from Belfast compared to historic trends

Age
Continued ageing of the city's population

5.6   The PG-2yr scenario developed by Edge Analytics indicates that a continuation of growth trends over the past two years would result in population growth of circa 19,000 over the emerging plan period (2014 – 2035). With an allowance for vacancy and second home ownership, this would generate a need for 705 dwellings per annum using published 2012-based assumptions on household formation rates. This increases to 791 dwellings per annum if an allowance is made to improve household formation amongst younger age groups. This upward adjustment is considered appropriate for this scenario as it provides a positive response to recognised recent historic levels of undersupply of housing and the potential implications this has had on the ability of households – particularly younger households – to form in Belfast. This represents a total need for approximately 17,000 additional homes over the emerging plan period.

5.7   This would result in a broad continuation of historic levels of net migration from Belfast, with an overall net outflow of migrants from the city to other parts of NI and overseas throughout the plan period. This would be likely to result in a continued ageing of the city's population, with the majority of growth attributable to older age groups. This would be unlikely to enable growth in the city's labour-force, and thus only limited or no growth in employment would likely be supported within the Belfast economy, even allowing for modest future changes to labour-force behaviour, without changes to commuting flows into the city.

Scenario 2: Supporting Baseline Employment Growth

5.8   Forecasts produced by Ulster University (UU) indicate that Belfast's economy is likely to grow over the period covered by the emerging Development Plan. A baseline employment growth scenario would lead to the creation of circa 2,210 jobs annually over the period to 2035, which is only marginally below the level of growth achieved historically since 2001.

5.9   However, the modelling presented in section 4 of this report shows that a continuation of past demographic growth trends would be unlikely to sufficiently grow the labour-force and support this scale of job creation, even allowing for a modest level of change in economic activity amongst all age groups. This suggests that more pronounced changes in labour-force behaviour – or changes in the commuting balance with other areas of NI – would be necessary to support the likely baseline level of job growth forecast in Belfast. Indeed, it is understood that the UU forecasting model applies different assumptions, which suggest that labour-force behaviour could change to support likely job growth and thus lessen the need for growth in population and labour-force. There is, however, considerable uncertainty around future changes in labour-force behaviour, creating challenges and risks when relying on or planning for such changes.

5.10   Without such significant changes in labour-force behaviour, modelling produced by Edge Analytics suggests that a greater growth in the population would be necessary to support the baseline job growth scenario. In order to grow the city's labour-force, Scenario 2 allows for higher levels of net in-migration over the plan period, with fewer working age residents moving elsewhere and new working age residents attracted to the city.

Scenario Implications

Supporting Baseline Employment Growth

66,000
Additional residents
2014-2035

403,000 total population in 2035

37,000
Additional homes needed
2014-2035

1,750 dwellings per annum

46,000
Additional jobs
supported by labour force

Migration
Net inflow of
migrants to Belfast

Age
Balanced age profile of
population growth

5.11   The baseline employment-led scenario developed by Edge Analytics indicates that circa 66,000 additional residents will be needed to grow the labour-force and support likely economic growth in Belfast over the plan period. This is based on prudent assumptions on future labour-force behaviour, applying changes to economic activity rates and allowing for some growth to be supported through a fall in the unemployment rate. While there is a possibility that this growth could be supported by a smaller increase in population – as reflected within the UU forecasting model – the assumptions applied within this model are unknown. Given the scale of difference compared to Edge Analytics' POPGROUP scenario outputs, the assumptions applied by UU within their model are likely to significantly deviate from those applied through POPGROUP.

5.12   Supporting the higher level of growth suggested as being necessary by the POPGROUP scenario would generate a need for 1,759 dwellings per annum using published 2012-based assumptions on household formation rates, including an allowance for vacancy and second home ownership. This represents a total need for approximately 37,000 additional homes over the emerging plan period. No further upward adjustment associated with changes to household formation rates is considered necessary under this scenario, given that the implied scale of uplift assumed in the overall level of associated housing growth would more than respond to the impacts of historic low levels of development in the city.

5.13   Providing for this level of growth would support higher levels of net in-migration to Belfast, contrasting with the more recent sustained net outflow of residents from the city to other areas in NI and overseas. Growing the labour-force would also yield a stronger growth in the working age population, resulting in a comparatively balanced profile of population growth when compared to that which could be expected based on recent demographic trends (Scenario 1).

Scenario 3: Supporting Higher Job Growth

5.14   While the baseline employment growth scenario underpinning Scenario 2 is described as the most likely economic outcome for Belfast, a stronger macro-economic context could result in higher levels of employment growth in the city. This upper scenario could result in the creation of circa 3,275 additional jobs per annum to 2035, which would represent a level of growth sustained at broadly pre-recession levels. While this level of growth has been achieved historically, maintaining growth at this level is likely to require policy intervention and investment, and is not solely dependent upon the availability of a suitably sized labour-force.

5.15   As with Scenario 2, there is a degree of uncertainty around how the labour-force would respond to this level of growth through changing economic activity, unemployment and commuting patterns. It could be considered more likely that participation would increase in light of this positive economic growth context, and indeed the modelling allows for 10% of additional jobs to be taken by unemployed residents. Even allowing for this change, however, the modelling suggests that there remains a resultant need to considerably grow the labour-force to support job creation in the local economy, with a particular growth in the working age population. This would be achieved through elevated and sustained higher levels of net in-migration, with fewer people moving out of Belfast to other parts of NI and overseas and more people attracted to work in the city.

Scenario Implications

Supporting Higher Employment Growth

89,000
Additional residents
2014-2035

426,000 total population in 2035

47,800
Additional homes needed
2014-2035

2,275 dwellings per annum

69,000
Additional jobs
supported by labour force

Migration
Significant increase with net
inflow of migrants to Belfast

Age
Stronger growth in
working age population

5.16   The upper employment-led scenario developed by Edge Analytics suggests that circa 89,000 additional residents would be needed over the period to 2035 in order to sufficiently grow the labour-force and support higher levels of employment growth. This represents growth of around 26% relative to the 2014 population.

5.17   This growth scenario is predicated upon relatively prudent changes to future labour-force behaviour. A greater deviation from this position could result in the existing population playing a greater role in supporting future employment growth, thus reducing the need for additional labour-force growth and lowering the number of additional residents required. Such changes would need to move beyond the assumed reduction in unemployment and increased economic activity rates applied in the modelling, introducing a potential risk in supporting economic growth in the city if these changes do not materialise.

5.18   Notwithstanding this issue, a growth of around 89,000 additional residents would require a significant change in recent migration trends, with a sustained net inflow of migrants to Belfast beyond the levels seen over recent years. This would generate a sizeable growth in the working age population, who are assumed to make the greatest contribution towards supporting employment growth.

5.19   Under this scenario, a need for 2,277 dwellings per annum would be generated, based on published 2012-based assumptions on household formation. This includes an allowance for vacancy and second home ownership. This represents a total need for approximately 47,800 additional homes over the emerging plan period.

Summary and Implications

5.20   Three potential growth scenarios are identified within this section, based on:

- Adjusted Demographic Growth (Scenario 1);

- Supporting Baseline Employment Growth (Scenario 2); and

- Supporting Higher Job Growth (Scenario 3).

5.21 It is evident that each scenario suggests a different level of population growth will occur in Belfast over the emerging plan period to 2035. The potential impact of supporting sustained employment growth in the city has been illustrated through the different options with the higher levels of projected population and household growth under Scenarios 2 and 3 directly resulting from a consideration of the impact of the need to attract and retain a scale of labour-force growth above that supported by a continuation of historic trends.

5.22 When considering the level of housing growth implied as being needed to accommodate the population, therefore, the resultant implied levels of provision form a relatively broad range. This suggests that a need for between 17,000 and 47,800 additional homes will be generated between 2014 and 2035.

5.23 However, there is scope to refine this range, particularly given that the implications of providing for a level of growth towards the upper or lower end of this range would vary considerably. The following section of this report therefore evaluates these scenarios against a range of factors including a benchmarking of implied growth in those UK cities considered in earlier sections of this report. This process is intended to move from simply considering the potential need for housing towards a considered view of an appropriate and reasonable level of housing to be provided for through the emerging Belfast LDP.

6. Evaluating the Growth Scenarios

6.1 The previous section introduced three potential growth scenarios for Belfast, with the scale of population growth – and the resultant need for housing – varying between the scenarios presented to reflect both baseline demographic growth trends and baseline and upper levels of employment growth.

6.2 In order to appraise these scenarios in further detail, this section establishes a clear evaluation framework, which considers and tests each scenario in the context of:

- **Demographic considerations** – the extent to which the implied demographic change deviates from historic trends, particularly in terms of overall population and levels of migration;

- **Economic factors** – the likely growth in the labour-force and the extent to which forecast economic growth can be supported;

- **Cross-boundary implications** – scoping the potential effects of each growth scenario on other districts in NI; and

- **Land availability and market factors** – the capacity of the housing market to accommodate the resultant levels of housing growth required, based on the available land supply and historic levels of housing development in Belfast.

6.3 In considering each of these indicators, the context established by the Regional Development Strategy for Belfast City is recognised. This recognises the overarching strategic direction established by the Regional Development Strategy (RDS) to see Belfast's role as the regional economic driver strengthened with a return to a growing population.

Demographic Considerations

6.4 Under Policy SFG2, the latest RDS sets out a recognition of the need to grow the population of the City of Belfast *'in order to have a strong capital city which is the economic driver of Northern Ireland'*.

6.5 The RDS establishes an aim for the population of Belfast City to be 300,000 by 2021, a level last achieved in the 1980s. As recognised throughout this report, boundary changes make direct comparison with this target challenging. However, on the basis that the base population is some 54,000 people higher as a result of boundary changes (Figure 1.1) this target could be reasonably elevated to 350,000.

6.6 All three potential growth scenarios identified in section 5 would grow the population of Belfast, although the scale of growth is a key area of difference. Comparing the population growth implied with the historic profile of growth provides valuable context in interpreting these sensitivities. This is illustrated in the following chart.

Figure 6.1:   Comparing Historic and Projected Population Growth 2014 – 2035
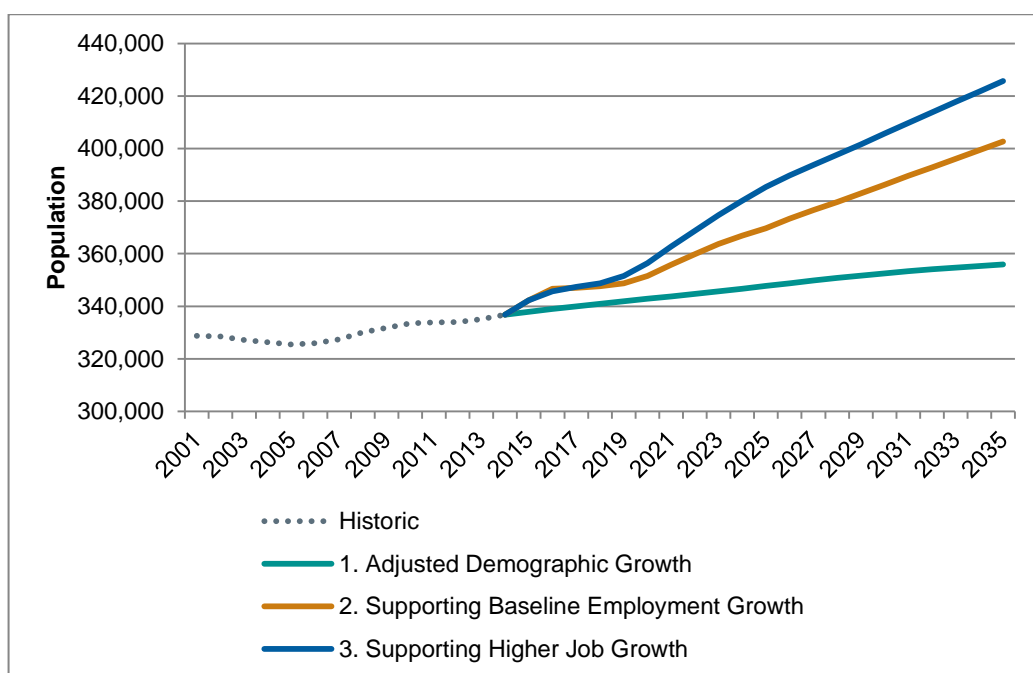

Source: NISRA; Edge Analytics modelling based on Ulster University forecasts

6.7   Scenario 1 would represent a continuation of the modest level of population growth seen since the middle of the last decade over the plan period. This would result in a relatively modest growth in the city's population and would evidently not represent a return to levels of population seen over the longer-term in Belfast. This scale of growth would fall someway short of the ambition set under Policy SFG2 of the RDS.

6.8   It is clear that Scenario 3 would result in the greatest growth in the population of Belfast, deviating considerably from recent demographic trends in the city. This scenario would accelerate the growth of Belfast, although – when set in the context of longer term change in the population – it is noted that a population of circa 426,000 in 2035 is not unprecedented, representing a broad return to the population recorded in the former Belfast LGD in 1971[25] (Table 3.1). This would, however, reverse the long-term population decline experienced in Belfast since this point, delivering a step change in the growth profile of the city.

6.9   The scale of population growth is slightly more moderated under Scenario 2, but would again represent an acceleration in the growth of Belfast beyond a continuation of the historic trend. Growth at the rate projected under this scenario would also broadly align with the objective for growth set out under Policy SFG2. As identified earlier in this report, all three scenarios would result in population growth which exceeds the level implied by the latest 2014-based SNPP dataset published by NISRA, which projects a level of growth which falls below Scenario 1.

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[25] This comparison should be viewed in the context that the 1971 figure relates to the smaller LGD boundary with a comparable boundary therefore likely to imply a closer alignment recognising that it would take account of a larger geographic area.

6.10 In Figure 3.21 of this report, the scale of population growth projected in Belfast is benchmarked against comparable UK cities, based on the 2014-based SNPP. In order to further develop an understanding of this context, the higher levels of growth associated with the potential growth scenarios can also be compared with other cities. It is, however, recognised that the comparable trend-based projections represent only '*starting points*'[26] which are adjusted in arriving at planned levels of housing provision within the relevant adopted or emerging planning strategies for each city.

Figure 6.2:   Indexed Population Growth – Scenarios and Comparable UK Cities
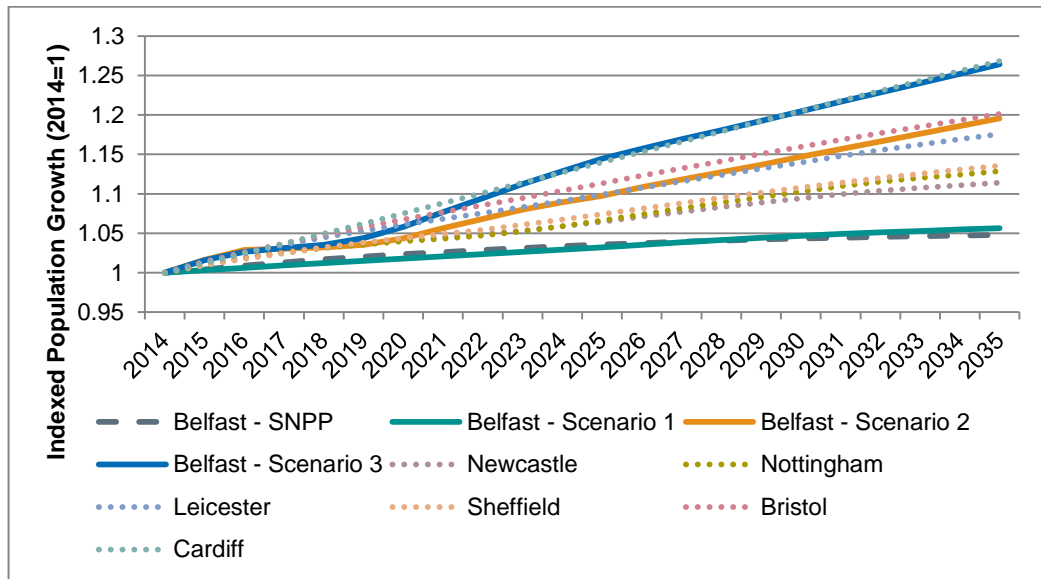
*Source: NISRA, ONS, StatsWales, Edge Analytics, Turley*

6.11 The indexed rate of population growth under Scenario 3 would surpass most of the comparator cities presented, aligning with the strong level of growth projected in Cardiff. As previously identified, Scenario 2 would lead to substantial but slightly moderated population growth, which aligns relatively closely with Bristol and Leicester but surpasses the majority of the comparator cities. Scenario 1 only slightly adjusts the 2014-based SNPP published by NISRA, and would continue to imply a level of population growth in Belfast which falls considerably below even the baseline level of demographic growth projected in comparable UK cities. This is likely to be more pronounced when considering actual planned levels of housing provision in these cities, which is likely to move beyond and uplift the '*starting point*' projections presented above.

6.12 Migration is a further important demographic consideration, given that the higher levels of population growth associated with Scenario 2 and Scenario 3 are principally driven by an assumed reversal of migration trends from a net outflow (under Scenario 1) to a sizeable net inflow under both scenarios. This could potentially be achieved by both reducing the outflow of Belfast residents to elsewhere in NI or overseas and increasing the number of residents moving to the city from elsewhere in NI or overseas, collectively increasing the net flow of migrants moving to the city.

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[26] Planning Practice Guidance Reference ID 2a-015-20140306

6.13 The implied annual average level of net migration under each of the potential growth scenarios is presented in the following chart, and benchmarked against the historic net flows published by NISRA.

Figure 6.3:   Benchmarking Projected Role of Migration in Belfast 2001 – 2035
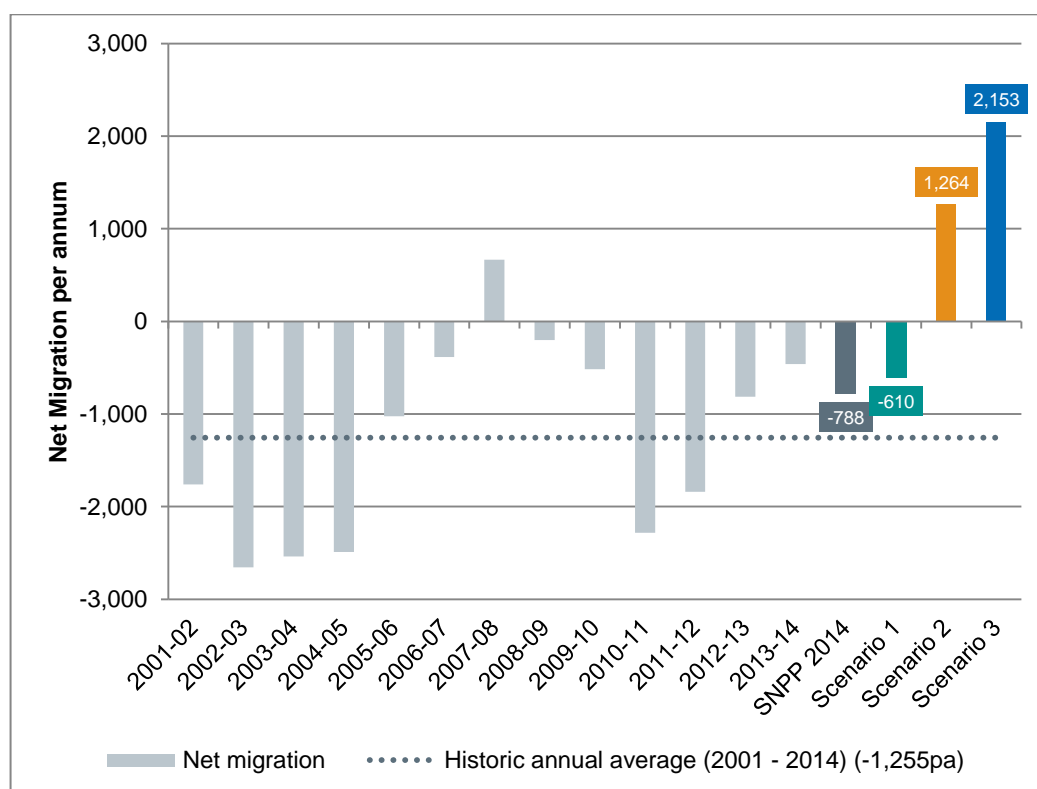
Source: NISRA; Edge Analytics modelling based on Ulster University forecasts

6.14 The sustained net inflow of migrants to Belfast under Scenario 2 and most significantly Scenario 3 would require a level of net migration which has not been seen in recent years and as noted above would represent a significant reversal from historic trends. Indeed, it is clear that only 2007/08 saw a net inflow of migrants of any scale to Belfast, with all other years since 2001 characterised by a net outflow.

6.15 As identified earlier in this report, the net inflow seen in 2007/08 – and the reduced net outflow seen in preceding years – is likely to partially reflect the strong performance of the Belfast economy during this period. This lends credence to the assumption that the creation of additional employment opportunities in the city would result in a changing migration pattern, with existing residents less likely to move elsewhere for work and new residents attracted from both elsewhere in NI and overseas. However, it is important to recognise that the levels of net migration implied by these scenarios would represent a clear step change from the historic profile, particularly under Scenario 3.

6.16 A final demographic consideration relates to the size of households likely to form under each of the potential growth scenarios. Modelling outputs produced by Edge Analytics are broken down by household size, showing how the number of residents per

household varies between the scenarios developed. This is summarised in the following chart.

Figure 6.4:   Size of Additional Households Forming 2014 – 2035
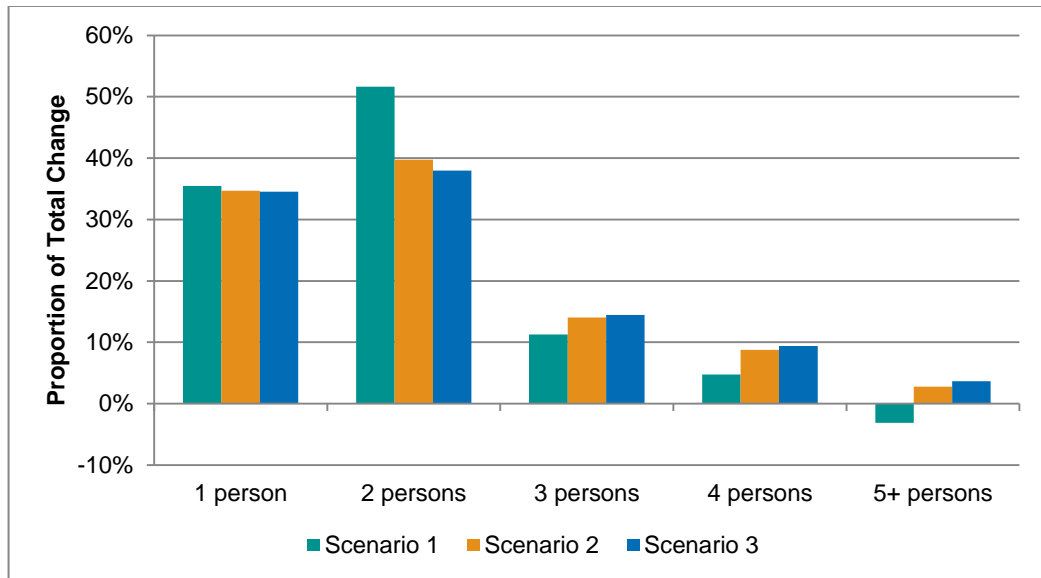
Source: Edge Analytics

6.17   It is clear that all scenarios would generate the strongest growth in smaller households with two residents or fewer. However, there is variation between the scenarios, with Scenario 1 – based largely on recent demographic trends – resulting in a stronger growth in smaller households and indeed a marginal decline in the largest households with five or more residents. Conversely, the higher growth scenarios would result in larger households forming a greater component of future need, particularly within Scenario 3. This has implications for the size and type of housing needed to accommodate the city's growing population and therefore by implication the anticipated pipeline which is considered as the final step of the evaluation process.

Economic Drivers

6.18   The RDS clearly establishes the importance of understanding the economic role and potential of Belfast. The RDS establishes a clear objective to: *'Strengthen Belfast as the regional economic driver'*. The Spatial Framework within the RDS also states the:

'Importance of Belfast City, at the heart of a Metropolitan area, as the major driver for regional economic growth'

6.19   The link between housing and the economy is also recognised within the RDS which in planning for a continued growth in employment in Belfast that:

'There are significant opportunities for more jobs to be created and it will be important to have a wide variety of house types for those wishing to live and work in the City.'

6.20   The level of employment growth which could be supported under each of the potential growth scenarios significantly varies, with Scenario 2 and Scenario 3 explicitly

developed to illustrate the scale of population growth necessary to support likely and upper scenarios of employment creation in Belfast over the emerging plan period.

6.21   The baseline employment growth supported by Scenario 2 would create approximately 46,000 additional jobs over the emerging plan period (2014 – 2035), with the average creation of circa 2,210 broadly aligning with the average job growth recorded annually in Belfast since 2001. When considering the annual rate of growth, however, the average 0.8% growth in employment annually falls below the levels seen historically (1.1%). The higher level of employment growth supported by Scenario 3 would result in a slight uplift in the level of annual job creation in Belfast (1.2% per annum) relative to this historic position, albeit while continuing to fall below the levels seen prior to the recession (1.5% per annum).

6.22   In contrast to these employment-led scenarios, Scenario 1 shows that a continuation of recent demographic trends would be unlikely to grow the labour-force without fundamental and significant changes in labour-force behaviour and economic participation recognising the assumed ageing of the population following a trend-based projection of change. This would pose a significant risk to the capacity of the city to support the sustained growth of its economy and to attract business investment required to enable this growth.

6.23   Under Scenario 1, employment growth could only be supported through substantial changes in economic activity – beyond the levels forecast by the Office for Budget Responsibility (OBR) – a fall in unemployment or a notable change to the existing commuting dynamic. While the latter two factors in particular could reasonably change, there is an inherent risk and uncertainty in relying upon such changes to support future economic growth. While a fall in unemployment could be expected in an improving economic context, economic growth could be constrained if this does not occur. Equally, a shift in commuting patterns could have negative implications for other parts of NI, if it is assumed that fewer residents commute elsewhere and a greater number commute to the city from elsewhere in NI, for example. The extent to which such changes in labour-force behaviour should be relied upon in planning for Belfast's future economic growth and prosperity is therefore uncertain.

6.24   On this basis, Scenario 1 is considered to represent a significant risk by potentially constraining likely and potential job growth in the city.

6.25   Scenarios 2 and 3, by contrast, would evidently represent a considerably more positive picture with regards to supporting a level of job growth. The scale of job growth under Scenario 2, as established above, would represent a reasonable level of job growth when set against a historic context of differing economic cycles over recent years. This is therefore considered to represent a reasonable and comparatively ambitious level of employment growth to seek to accommodate and support.

6.26   The scale of job growth under Scenario 3 would represent a more ambitious sustained picture of growth. Over the longer-term, whilst the scale of forecast job growth is considered credible and supported by the evidence developed by UU, there is evidently a risk that a continuation of different economic cycles could challenge the delivery of levels of job growth in this order.

6.27 Importantly, as established under the previous evaluation step, the implied modelled population and household growth under these scenarios allow for considerably higher levels of net migration to Belfast, implying fewer existing residents moving elsewhere and an increased inflow of people moving to the city from elsewhere in NI and overseas. Under these scenarios, this is assumed within the modelling to significantly grow the labour-force – beyond the levels achieved through a continuation of recent demographic trends (Scenario 1) – and ensure that baseline and upper levels of job growth can be supported.

6.28 Again, however, it is important to recognise that the levels of net migration – and the overall scale of growth – under Scenario 3 in particular represent a significant departure from historic trends. The extent to which this can be consistently achieved through the delivery of housing is therefore uncertain, with such a fundamental change likely to require further policy intervention beyond an increased housing supply. Such interventions could result in more significant changes to labour-force behaviour, which through policy successes could deliver forecast levels of job growth through lower population and household growth in the city.

Cross Boundary Implications

6.29 Belfast is integral to the wider NI housing market and economy, with the city's growth influencing other parts of the country either directly or indirectly. In developing an evidence base for the city's future growth, consideration should therefore be given to the implications of Belfast's growth on other districts in NI.

6.30 In particular, migration and commuting dynamics have cross-boundary implications, given that they involve the movement of people to and from Belfast from other areas of the country.

6.31 Within this context, it is noted that Scenario 2 and Scenario 3 assume a considerable increase in net migration to Belfast, through a reduced outflow of existing residents moving elsewhere and an increased inflow of new residents. A component of this flow will relate to overseas migration, with an assumption that fewer Belfast residents will move overseas and an increased number attracted from Great Britain, Ireland and other countries. However, achieving the higher levels of net migration necessary to support economic growth is also likely to result in changing internal migration dynamics within NI, with the city attracting migrants from other districts and sending fewer in the opposite direction. This will evidently have the greatest impact on other districts where there is the greatest deviation from the historic profile, under Scenario 2 and particularly Scenario 3.

6.32 However, recognising the role of Belfast within the NI economy and housing market, the scale of growth associated with Scenario 2 and Scenario 3 can assist in generating a positive wider effect at the macro NI level. Scenario 2 and Scenario 3 can play a role in restricting the outflow of people from NI to overseas for employment, for example, while the creation of employment opportunities can also enable the retention of students coming to Belfast to study from overseas who have otherwise historically moved away from NI following graduation. However, achieving this change is likely to remain dependent upon the creation of new employment opportunities in Belfast, which – as identified above – could require policy intervention beyond the supply of new housing.

Land Availability and Market Factors

6.33 The implied amount of housing needed under each scenario has been benchmarked against recent levels of supply, in order to provide important context on the local market and its historic capacity to deliver levels of housing. This is illustrated in the following chart, based on the data presented at Figure 2.8.

Figure 6.5:   Historic and Implied Future Growth in Housing Stock in Belfast
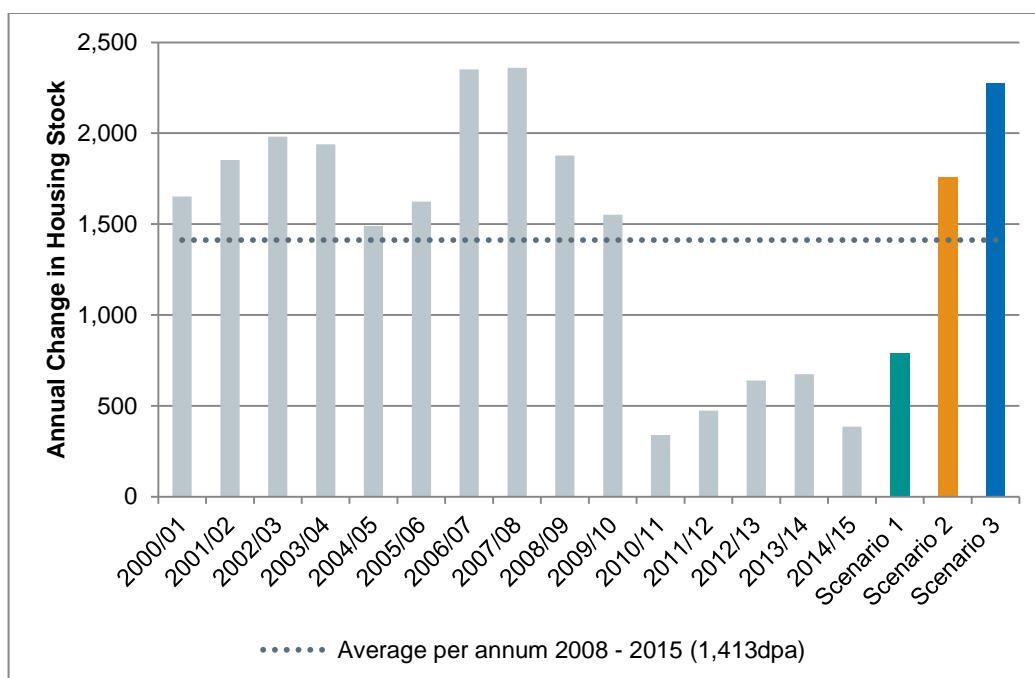
Source: Turley; Edge Analytics; BCC

6.34 As noted within section 2 of this report, the level of growth in Belfast's housing stock has slowed considerably over recent years, having reached over 2,000 dwellings per annum immediately prior to the recession. Scenario 1 would represent a continuation of this relatively suppressed market context, with the provision of approximately 790 dwellings per annum falling below even the level of growth achieved annually on average since 2008 (849 units per annum). This would imply that the scale of housing provision under this scenario would not reflect the capacity of the development industry to deliver higher levels in the city over the longer-term, particularly recognising a return to more positive market conditions than seen over recent years.

6.35 In contrast, while Scenario 2 would increase the rate of development in Belfast, it is important to recognise that this would represent a return to the levels of development last seen in the city in 2009/10, reversing the slowdown in housing delivery in Belfast. Scenario 3 would require levels of development which surpass those achieved even at the peak of the market Clearly, sustaining this high level of development throughout the emerging plan period would require a relatively fundamental increase in the level of development in Belfast, particularly compared to recent years.

6.36   Whilst development rates form a useful potential indicator of market capacity and strength, they are inevitably shaped not just by economic and financial factors but also the comparative availability and supply of deliverable and suitable land.

6.37   As set out in section 2, the latest housing monitor information on housing land supply identifies available potential of 24,726 units within the LGD. This quantum would be sufficient to meet need arising from Scenario 1 (17,000) but would be notably less than that identified as being necessary to meet need arising from Scenario 2 and significantly less than that implied as being required under Scenario 3 (37,000 and 47,800 respectively). When annual housing need is directly benchmarked against housing land supply, this shows that the identified potential supply would represent:

- 31 years' supply under Scenario 1 (800dpa);

- 14 years' supply under Scenario 2 (1,750dpa); and

- 11 years' supply under Scenario 3 (2,275dpa).

6.38   Whilst historically there is strong evidence to support the view that Belfast's housing land supply has predominantly been delivered on windfall and opportunity sites, rather than zoned housing sites, even in the unlikely event that all of the available potential reported in the Housing Monitor is deliverable over the plan period, a significant quantum of new zoned housing land would be required to deliver Scenarios 2 and 3.

6.39   In addition to issues relating to the identified scale of available land supply, it is also recognised that another set of factors will influence the City's ability to achieve the higher levels of housing delivery associated with Scenarios 2 and 3, including the following:

- The capacity of the local house building and construction industry to invest and grow to respond to and service this scale of output following the loss of local construction jobs and the migration of indigenous contracting activity during the recession;

- The pace at which development proceeds on the larger sites, particularly those within the City Centre, which have planning permissions for large numbers of apartments but which presently are not delivering, accepting the National Asset Management Agency (NAMA) effect which has hampered efforts on some of these sites; and

- Recognising the key contribution made by the Housing Associations as local volume house builders, their ability to continue to source and acquire sites in a rising market.

6.40   Taking account of this preliminary supply side analysis and the additional factors identified above, the level of delivery associated with Scenario 3 is unlikely to be a sound basis for plan making in this evidential context. Scenario 2 establishes a level of housing provision which in headline terms is considered to be more credible with reference to current available data and market evidence. Evidently this view is based upon a headline review of current market sentiment and a consideration of historic

supply which is evidently emerging from a significantly suppressed context. Through the plan-making process, more detailed consideration of land supply potential will serve to provide a more complete assessment of the likely capacity for housing development over the plan period.

Boosting Development in Cities

6.41   Section 2 of this report compared the rate of development in Belfast with UK cities, establishing that the rate of development has slowed to a greater extent in Belfast than seen elsewhere. When considering future growth in the housing stock, it is again beneficial to compare Belfast with other cities, in order to provide important context on how these cities have developed and plan to develop in future. This provides an important additional context to the review of the potential pipeline of residential land and the concentration of supply within the 'city centre' outlined above.

6.42   The annual planned growth[27] in the housing stock of comparable UK cities can be considered relative to the size of the housing stock[28] in 2014. Although illustrative, this provides an indication of how the level of growth in Belfast's housing stock under each scenario compares to that planned in other cities.

Figure 6.6:   Benchmarking Proportionate Annual Growth in Cities' Housing Stock 2014 – 2035
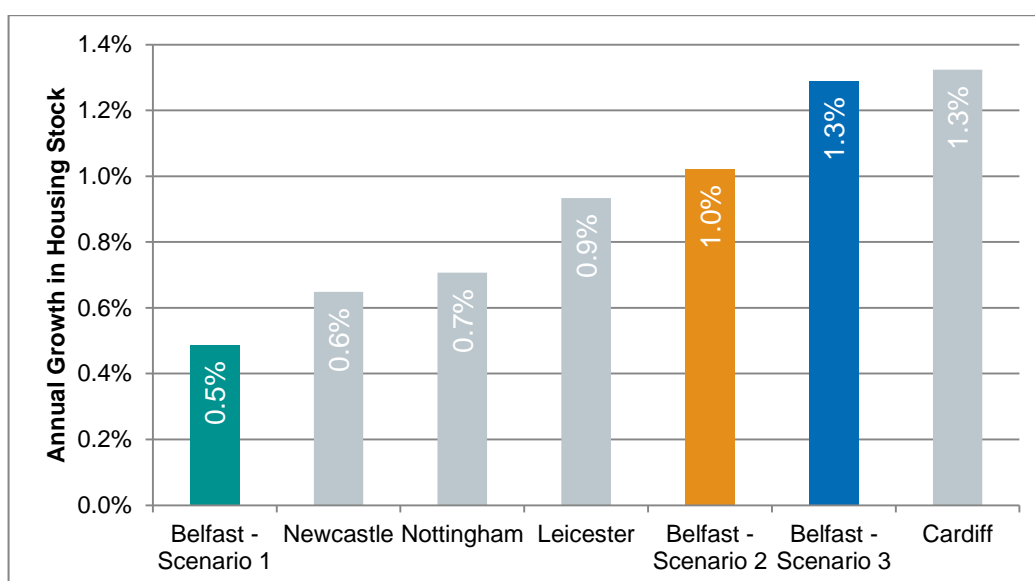
Source: Turley; Edge Analytics; DCLG; Department for Communities; StatsWales

6.43   It is clear that Scenario 1 would generate only a small annual growth in housing stock, below the levels planned in comparable UK cities with adopted housing targets. The scale of growth implied under Scenario 2 would represent a relatively ambitious level of growth – surpassing Newcastle, Nottingham and Leicester – but a level which falls below the levels of growth planned in Cardiff. Scenario 3 would generate the strongest proportionate annual growth in Belfast's housing stock, falling only slightly below Cardiff.

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[27] Based on Local Plans adopted following the publication of the National Planning Policy Framework (NPPF)
[28] Based on data underpinning Figure 2.17, sourced from Department for Communities Housing Statistics Report (NI); DCLG Live Table 125 (England); StatsWales (dwelling stock estimates by local authority and tenure)

6.44   While the suggested rate of growth planned in Newcastle upon Tyne appears comparatively low, section 2 identified the city as an area where the housing stock has grown considerably over recent years, with this growth clearly standing out from the other cities presented in the analysis.

6.45   While this growth is not entirely attributable to the city centre – given that the figures presented relate to the administrative boundary of the City Council – it is notable that the city centre market has grown and matured as the growth in housing stock has accelerated over this recent historic period. The Core Strategy and Urban Core Plan – prepared jointly with Gateshead and adopted in March 2015 – states that the urban core accommodates around 23,000 people, but has the potential to attract more people and meet a range of housing needs[29]. To this end, securing a mix of housing in the urban core is integral to the spatial strategy for the urban core, with many sites and vacant properties which have potential for residential and mixed use development over the plan period. The development of the Core Strategy and Urban Core Plan is therefore central to the strategic planned growth of the city centre market, with its allocations providing a supply of land to achieve the strategic ambitions therein.

6.46   A growth in city centre living has also been a key feature of the evolution of other larger cities in England. Manchester has seen a significant growth in the number of people living in the city centre, with only 90 people living in the heart of the city in 1990 compared to around 28,500 today[30]. The city centre market has distinct characteristics, with a strong demand and concentration of privately renting households and large numbers of apartments and high density schemes, aimed at single person and couple households. The delivery of new housing in the city centre reflects a longstanding strategic ambition of Manchester City Council, which has more recently sought to provide housing to support sustainable economic growth[31]. Successive strategy documents have been prepared for the city centre, with the latest document[32] seeking to ensure that the city is sustainable, highly skilled, connected and liveable, with the latter considered integral to Manchester's future by providing a means of retaining existing residents while attracting people, investment and jobs. The liveability of a city reflects more than just the supply of housing, however, highlighting the need for a holistic approach to strategic planning.

6.47   Previous documents recognised that the city centre's development has been largely achieved through successful and dynamic partnerships between the public and private sectors[33]. Regeneration has also been shaped by the targeted development of Strategic Regeneration Frameworks for different areas of the city, with a recognised need for gap funding to progress development where the private sector cannot be solely relied upon to drive change[34]. More recently, the devolution agenda in England has led to the creation of a single £300million Greater Manchester Housing Fund, which has provided loan funding for residential development in the city centre and other areas of the city region in partnership with the Homes and Communities Agency (HCA).

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[29] Newcastle upon Tyne City Council and Gateshead Council (2015) Core Strategy and Urban Core Plan

[30] Turley (2015) Rise and Reinvention? The Manchester City Centre Housing Market

[31] Manchester City Council (2012) Core Strategy 2012 to 2027

[32] Manchester City Council (2016) Our Manchester – The Manchester Strategy

[33] Manchester City Council (2009) City Centre Strategic Plan 2009 – 2012

[34] Manchester City Council (2012) Report for Resolution (18 January 2012) – Housing investment and mortgage support within Manchester

6.48 Liverpool city centre also includes a number of distinct residential and mixed use neighbourhoods, with some long-established areas and others where the residential population has more recently grown through the conversion and redevelopment of vacant commercial premises. An estimated 33,500 people lived in the city centre in 2015, increasing tenfold since 2001[35]. This has followed a period of significant development in the city centre over recent years, which has included a number of major development projects but is yet to yield a similarly transformational economic change[36].

6.49 Notably, this growth has been secured despite the absence of an up-to-date Local Plan, given that the latest Unitary Development Plan was adopted in 2002. Development in the city centre has therefore largely responded to market opportunities, including land availability and market sentiment. Over recent years, for example, there has been significant developer interest in purpose-built student accommodation in the city centre, with this increased supply viewed as a short-term phenomenon which is expected to naturally diminish over time[37]. There is, however, a recognition that the provision of high quality student accommodation is integral to student perception of the city, increasing the likelihood that students will remain in the city following graduation and thus generating a positive economic benefit[38]. Achieving a critical mass of city centre residents has also generated demand for services and facilities, assisting in changing the character of the city centre[39].

6.50 It is evident that there are precedents in other UK cities to see a significant and sustained growth of a city centre market contributing to strong levels of population and household growth. As set out within the consideration of the market and the land supply it is important to recognise, however, that the city centre market in Belfast has not moved to these stages of maturity. The realisation of the scale of the potential pipeline in the city centre will need strong policy and strategy support. This will be an important factor in achieving the higher levels of development implied through Scenarios 2 and 3.

Moving Towards a Recommended Level of Population and Household Growth

6.51 This evaluation has considered the demographic and economic implications of the potential growth scenarios presented in section 5 of this report, whilst also providing a headline assessment of the extent to which the levels of housing provision required could be supported by the market through a consideration of market factors including the potential pipeline available land supply identified by BCC. Through the evaluation process, consideration has also been given to the cross-boundary implications of the scenarios, highlighting the possible wider consequences of planning for different levels of growth. In translating this evidence based assessment into policy, BCC will need to extend this cross-boundary assessment through a process of dialogue with neighbouring authorities.

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[35] Liverpool City Council (2016) The Draft Liverpool Local Plan
[36] Ibid
[37] Liverpool City Council (2016) Liverpool Mayoral Review – the future of student accommodation in Liverpool
[38] Ibid
[39] Liverpool City Council (2016) The Draft Liverpool Local Plan

6.52 The stepped evaluation process has clearly shown that whilst Scenario 1 shows the strongest alignment with recent demographic growth trends, planning for this level of growth would present a number of risks to the sustainable growth of Belfast. This report has recognised that the housing market in Belfast has been suppressed over recent years, with limited growth in the housing stock compared to the levels achieved in a more positive market and macro-economic context prior to the recession. Whilst assumptions have been made that the ability of households to form potentially improves and emphasis has been placed upon more recent positive levels of population growth, Scenario 1 would broadly continue development at a relatively suppressed rate. This would fail to secure a return to higher levels of development, effectively perpetuating this suppressed market context.

6.53 Provision of this scale would also result in Belfast's population and housing stock continuing to grow at a slower rate than comparator UK cities. The assumption that there will be a continued net outflow of people from the city would also fail to significantly grow the labour-force, with only limited growth in employment likely to be supported without relatively fundamental changes in labour-force behaviour. The extent to which such changes could realistically occur is uncertain, risking the city's future economic growth.

6.54 On the basis of the above, it is therefore considered that Scenario 1 would not represent a preferable growth scenario for Belfast, given that it is likely to perpetuate the comparatively suppressed market context of recent years and result in negative demographic and economic consequences for the city.

Balancing housing and employment growth in the context of delivery

6.55 The analysis in this section has identified that higher levels of housing development would be more likely to grow the labour-force, enabling the attraction of new working-age residents and the retention of those existing residents who would otherwise move elsewhere in NI or overseas. This would represent a planned departure from the recent trend for the city, but may be influenced by factors other than the supply of housing.

6.56 Further policy intervention may therefore be necessary to support this scenario and secure such a step change in the city's demographic profile. Alongside supportive local planning policies, this could include strategies to elevate external perceptions of the city with a focus on aspects such as continuing to build upon its cultural and retail offer as well as its global reputation.

6.57 It is apparent from the evaluation process that it is considered reasonable and credible to plan for a growth in Belfast's economy at least in line with the baseline scenario. This would see the city's economy continue to grow as it has done in recent years. The higher levels of growth assumed under the upper scenario whilst considered credible evidently represent a more ambitious departure from longer-term rates of growth to achieve levels seen through more buoyant parts of the economic cycle.

6.58 In evaluating the scenarios the inherent uncertainty in seeking to balance employment and population growth has been identified. There are a range of complex factors which interrelate through the link between the two drivers. The analysis has highlighted that supporting the implied scale of growth under both a baseline and higher growth forecast

would potentially require a notable uplift in the population and household growth of Belfast.

6.59   At the upper end of the range of growth identified (Scenario 3), the scale of the departure from historic trends is evidently significant in this regard.

6.60   The uncertainties involved in projecting future labour-force behaviour would suggest that there is an element of flexibility in the implied need for housing associated with the UU job growth forecast under both scenarios. The POPGROUP scenarios fix commuting rates, for example, which UU considers unlikely if Belfast generates a significant number of new jobs and follows the trend of urbanisation and city centre living seen in other UK cities. This will, however, evidently require further consideration through the development of policy in Belfast, requiring dialogue with other districts sharing strong labour-force relationships with the city to ensure that assumptions relating to job growth and housing provision don't have wider implications.

6.61   The skills profile of the population is a further factor requiring consideration, reflecting the need to ensure that there is an alignment between the skills of available labour and the skills needed to fill newly created jobs. This will influence the capacity of existing and future residents to support job growth in Belfast, and is one of a range of potential policy factors providing important context when considering the final stages of the evaluation process with regards to likely levels of supply and market deliverability.

6.62   The scale of development implied under Scenario 2 and Scenario 3 would represent a significant uplift in the recent level of housing delivery in Belfast, returning to levels last seen prior to the economic downturn and assuming that these could be sustained throughout the plan period.

6.63   The consideration of delivery factors in this evaluation has been limited to a headline review of the potential pipeline of land identified by BCC set in the context of delivery rates through different market cycles. Further detailed review of the market reality of achieving a notable uplift in the supply of housing should be undertaken to build on this evaluation. However, it is apparent that the implied levels of growth associated with Scenarios 2 and 3 have not been consistently achieved in Belfast during recent years. On this basis it is considered prudent to exercise some caution when considering the level of development which can be realistically supported by the market over the plan period and the capacity/ability of the construction industry to deliver higher levels of output.

6.64   This market reality needs to be balanced against the economic potential of Belfast, with the scenarios assuming that growth of this scale is necessary to grow the labour-force and support baseline or upper levels of employment growth. However, the analysis in this report has highlighted the complex relationship between housing and jobs, with labour-force behaviour a significant factor which can be influenced and indeed shaped by the success of policy intervention. The scenarios are predicated upon modest changes to economic activity and a reduced unemployment rate, with commuting rates held constant. Varying these assumptions impacts upon the scale of migration necessary to grow the labour-force, with a more significant increase in economic participation, for example, increasing the capacity of the existing population to support future employment growth and reducing the need for higher levels of migration.

6.65   There is a significant degree of uncertainty when considering future labour-force behaviour, however, and relying upon fundamental and unprecedented changes could result in the labour-force failing to sufficiently grow, constraining economic growth. Assuming that commuting dynamics change considerably also has implications for other areas of NI. There is therefore a need for realism when considering likely future changes in labour-force behaviour.

6.66   While the modelling under Scenario 2 suggests that 37,000 additional homes – or approximately 1,750 dwellings per annum – would be needed to support baseline employment growth of 46,000 additional jobs, in reality it is possible that a marginally lower level of housing provision could provide a sufficient growth in the labour-force to support these additional jobs if successful policy intervention yields a greater change in labour-force behaviour.

6.67   Similarly, this suggests that upper levels of employment growth could also be potentially supported through the provision of fewer than 2,275 dwellings per annum, although there remains a concern that such a level of provision would represent an unrealistic increase when compared to in the recent level of housing development in Belfast.

6.68   Drawing the analysis together, it is considered that a reasonable and credible level of population and household growth sits somewhere between Scenario 1 and Scenario 2, with the evidence implying that this should be nearer to Scenario 2.

6.69   The provision of between **1,600 – 1,800 dwellings per annum** over the plan period appears reasonable in light of these considerations and the latest information available. This would broadly support baseline levels of employment growth in Belfast through a growth in the resident labour-force, while allowing for changes in labour-force behaviour which appear reasonable in the context of historic evidence but recognise that future changes could result from a more positive economic context. This is an issue which will require further consideration as the wider policy approach is developed. In the absence of successfully evidenced policy interventions, the labour-force assumptions applied within the POPGROUP modelling which underpins this level of housing provision are considered reasonable, drawing upon recognised local and national datasets.

6.70   In considering potential policy-led and justified changes to labour-force behaviour, it is important to recognise the context set by the RDS which asserts that:

• Over 50% of those who work in Belfast live outside it; and

• Many of those living in Belfast have not benefited from the economic growth

6.71   Whilst it is beyond the scope of this report to assess the reality of policy interventions to address existing labour-force behaviours, evidently achieving a greater level of self-containment of its workforce and an increased participation of those of working age in the economy would ensure that housing provision of this scale would be likely to be able to support the strong levels of employment growth forecast by UU. Ongoing work between BCC and UU will form an important context for evaluating this aspect. Overall, however, it is evident that growth of this scale would also result in positive demographic and economic outcomes for the city.

6.72   Provision of this scale would also uplift recent levels of development, with the upper end of this range some 88% higher than the recent trend[40]. Whilst the scale of this uplift remains ambitious, it also appears realistic in light of the market's historic capacity to consistently deliver comparable levels of growth, recognising its cyclical nature. Further consideration will be required as to the potential deliverability of housing through the development of the plan to assess the extent to which higher or lower levels of housing could be realistically delivered.

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[40] Between 2008 and 2015, an average of 849 units were completed annually in Belfast (Figure 6.5)

7. Conclusion

7.1 This study has been prepared to consider the future population and housing growth of Belfast, with a reasonable range of potential population and household growth scenarios presented for the administrative area covered by Belfast City Council (BCC). The potential growth scenarios have been subjected to review and evaluation in order to arrive at a recommended position on a reasonable level of population and household growth to be planned for over the period from 2014 to 2035.

7.2 It is understood that the recommendations of this report will be considered by BCC in the development of policies relating to the provision of housing within the emerging Belfast LDP. It is important to recognise that this report is limited to presenting an evidence-based consideration of housing need and demand drivers and does not represent policy.

Market, Demographic and Economic Context

7.3 In considering the future operation of the housing market, it is important to establish an understanding of Belfast's current housing market, and the drivers shaping the current supply and demand for housing. It is evident that the rate of development in Belfast has fallen considerably over recent years, reflecting the wider macro-economic context. There is a significant supply of potential housing land, which depending on its deliverability and future build rates, could theoretically last well into the new plan period. Housing in the city is comparatively affordable, although average rents are relatively high compared to other areas of NI and the recent return to growth in house prices could lead to worsening affordability issues.

7.4 The rate of new housing development can directly influence population trends, and within this context it is notable that the rate of growth in the population has been variable over recent years. However, Belfast has seen sustained population growth since 2006, reversing the prolonged decline in population recorded historically. This period has continued to be characterised by a net outflow of people to other parts of NI, which though reducing in scale since 2008, has traditionally resulted in an outflow of younger working age residents in particular. This was supplemented by a strong net inflow of migrants from Great Britain and internationally between 2006 and 2009, although migration – both internal and international – has been largely balanced over the past two years.

7.5 The reduction in the scale of net outflow from Belfast to other parts of NI is likely to at least partially reflect the economic context, with the city largely continuing to create new employment opportunities in contrast with other areas of the country. Indeed, over the long term, the Belfast economy has performed well since 2001, with a particularly strong growth in employment prior to the recession despite a continued fall in population. This illustrates the complex relationship between population and employment growth, with scope for changes in the behaviour of the existing labour-force to support economic growth.

7.6   Forecasts developed by Ulster University (UU) suggest that the Belfast economy is likely to continue to grow, creating additional jobs. The most likely economic outcome ('baseline') suggests that circa 2,210 jobs could be created annually over the emerging plan period. A higher growth scenario ('upper') suggests that an improved macro-economic context could result in higher levels of employment growth in the city, with the creation of circa 3,275 jobs per annum returning to pre-recession levels of employment growth.

Developing Future Growth Scenarios

7.7   Official sub-national population projections (SNPP) have been developed by NISRA to estimate how a continuation of recent demographic trends – over a five year period – could change the population. The latest 2014-based projection suggests a stronger level of population growth than the preceding 2012-based dataset, with assumptions around migration the key area of difference between the two projections. Importantly, the 2014-based SNPP continues to assume that Belfast's population will grow at a slower rate than projected for NI as a whole, with a number of other LGDs expected to see stronger rates of growth. The scale of growth projected in Belfast is also limited in the context of comparable UK cities.

7.8   Recognising that this dataset is derived from trends recorded over a five year period, a range of alternative trend-based demographic projections have been developed by Edge Analytics using the POPGROUP suite of software. This shows that the latest 2014-based SNPP projects a level of growth which exceeds that implied by longer term historic trends, and relatively closely aligns with the past two years in particular. However, a demographic scenario which bases its trends on the last two years suggests a more sustained growth in population over the full plan period, resulting in a slightly higher level of population growth. This period has been characterised by more positive and improving migration trends, with a declining net outflow of residents and a continued growth in employment. This is considered to represent an appropriate period from which to derive past growth trends, recognising that the longer five year period used within the 2014-based SNPP has coincided with a comparatively suppressed market context.

7.9   Additional POPGROUP scenarios have also been developed by Edge Analytics to illustrate the scale of population and labour-force growth that may be necessary to support baseline and upper levels of employment growth. This is based on comparatively prudent assumptions on labour-force behaviour, and indeed it is understood that the UU model applies more significant adjustments which result in the forecast growth being supported by a considerably smaller growth in the population. The extent to which these changes will occur, however, is uncertain, and there is a clear risk that the labour-force will not sufficiently grow if these changes do not occur.

7.10   Reflecting on these factors, three potential growth scenarios are identified within this report, with variant levels of population, housing and employment growth associated with each. The key differences between each growth scenario over the full plan period (2014 – 2035) are summarised in the following table.

Figure 7.1:   Summary of Scenario Implications 2014 – 2035

	Scenario 1 Adjusted Demographic Growth	**Scenario 2** Supporting Baseline Employment Growth	**Scenario 3** Supporting Higher Employment Growth
Additional residents	19,000	66,000	89,000
Additional homes needed	17,000	37,000	47,800
Additional jobs supported	–	46,000	69,000

Source: Edge Analytics; Turley

Evaluating the Growth Scenarios

7.11   Each scenario suggests that a different level of population growth will occur in Belfast over the emerging plan period to 2035. When considering the level of housing growth implied as being needed to accommodate the population, the scenarios translate into a range of 17,000 and 47,800 additional homes between 2014 and 2035. However, there is scope to refine this range, particularly given that the implications of providing for a level of growth towards the upper or lower end of this range need to be understood and taken account of.

7.12   This report has therefore considered and tested each scenario in the context of the likely demographic and economic implications. A headline assessment of the extent to which the levels of housing provision required could be supported by the market has also been presented, with consideration also given to the cross-boundary implications of the scenarios. This has enabled a considered view to be reached on an appropriate and reasonable level of housing to be provided for through the emerging Belfast LDP.

Moving beyond planning for demographic based needs

7.13   The stepped evaluation process has clearly shown that whilst Scenario 1 shows the strongest alignment with recent demographic growth trends, planning for this level of growth would present a number of risks to the sustainable growth of Belfast. This report has recognised that the housing market in Belfast has been suppressed over recent years, with limited growth in the housing stock compared to the levels achieved in a more positive market and macro-economic context prior to the recession. Whilst assumptions have been made that the ability of households to form potentially improves and emphasis has been placed upon more recent positive levels of population growth Scenario 1 would broadly continue development at a relatively suppressed rate. This would fail to secure a return to higher levels of development, effectively perpetuating this suppressed market context.

7.14   Provision of this scale would also result in Belfast's population and housing stock continuing to grow at a slower rate than comparator UK cities. The assumption that there will be a continued net outflow of people from the city would also fail to significantly grow the labour-force, with only limited growth in employment likely to be supported without relatively fundamental changes in labour-force behaviour. The extent

to which such changes could realistically occur is uncertain, risking the city's future economic growth.

7.15   On the basis of the above, it is therefore considered that Scenario 1 would not represent a preferable growth scenario for Belfast, given that it is likely to perpetuate the comparatively suppressed market context of recent years and result in negative demographic and economic consequences for the city.

Balancing housing and employment growth in the context of delivery

7.16   Higher levels of housing development would be more likely to grow the labour-force, enabling the attraction of new working-age residents and the retention of those existing residents who would otherwise move elsewhere in NI or overseas. This would represent a planned departure from the recent trend for the city, but may be influenced by factors other than the supply of housing. Further policy intervention may therefore be necessary to support this scenario and secure such a step change in the city's demographic profile.

7.17   It is considered reasonable and credible to plan for a growth in Belfast's economy at least in line with the baseline scenario. This would see the city's economy continue to grow as it has done in recent years. The higher levels of growth assumed under the upper scenario whilst considered credible evidently represent a more ambitious departure from longer-term rates of growth to achieve levels seen through more buoyant years of the economic cycle.

7.18   There are evidently a range of complex factors which interrelate through the relationship between employment and population drivers of the need for housing. The analysis has highlighted that supporting the implied scale of growth under both a baseline and higher growth forecast would require a notable uplift in the population and household growth of Belfast.

7.19   At the upper end of the range of growth identified (Scenario 3), the scale of the departure from historic trends is evidently significant.

7.20   The uncertainties involved in projecting future labour-force behaviour would suggest that there is an element of flexibility in the potential implied need for housing associated with the job growth forecast by UU under both scenarios. The POPGROUP scenarios fix commuting rates, for example, which UU considers unlikely if Belfast generates a significant number of new jobs and follows the trend of urbanisation and city centre living seen in other UK cities. This will, however, evidently require further consideration through the development of policy in Belfast, requiring dialogue with other districts sharing strong labour-force relationships with the city to ensure that assumptions relating to job growth and housing provision do not have wider implications.

7.21   The skills profile of the population is a further factor requiring consideration, reflecting the need to ensure that there is an alignment between the skills of available labour and the skills needed to fill newly created jobs. This will influence the capacity of existing and future residents to support job growth in Belfast, and is one of a range of potential policy factors providing important context when considering the final stages of the evaluation process with regards to likely levels of supply and market deliverability.

7.22 The scale of development implied under Scenario 2 and Scenario 3 would represent a significant uplift in the recent level of housing delivery in Belfast, returning to levels last seen prior to the economic downturn and assuming that these could be sustained throughout the plan period.

7.23 This report has been informed by a headline review of the housing pipeline as identified by BCC. Further detailed review of the market reality of achieving a notable uplift in the supply of housing should be undertaken to build on the findings of this report. However, it is apparent that the implied level of growth associated with Scenarios 2 and 3 have not been consistently achieved in Belfast during recent years. On this basis it is considered prudent to exercise some caution when considering the level of development which can be realistically supported by the market over the plan period. Housing monitor information confirms that there is theoretically sufficient land to support Scenario 1 but the current potential supply falls well short of requirements for Scenarios 2 and 3.

7.24 This market reality needs to be balanced against the economic potential of Belfast, with the scenarios assuming that growth of this scale is necessary to grow the labour-force and support baseline or upper levels of employment growth. However, the analysis in this report has highlighted the complex relationship between housing and jobs, with labour-force behaviour a significant factor which can be influenced and indeed shaped by the success of policy intervention. The scenarios are predicated upon modest changes to economic activity and a reduced unemployment rate, with commuting rates held constant. Varying these assumptions would impact upon the scale of migration necessary to grow the labour-force, with a more significant increase in economic participation, for example, increasing the capacity of the existing population to support future employment growth and thereby reducing the need for higher levels of migration.

7.25 There is a significant degree of uncertainty when trying to predict future labour-force behaviour and relying upon fundamental and unprecedented changes could result in economic growth being constrained. Assuming that commuting dynamics change considerably also has implications for other areas of NI. There is therefore a need for realism when considering likely future changes in labour-force behaviour.

7.26 Reflecting on these issues, while the modelling presented in this report suggests that 37,000 additional homes – or approximately 1,750 dwellings per annum – would be needed to support baseline employment growth (46,000 additional jobs), in reality it is possible that a marginally lower level of housing provision could provide a sufficient growth in the labour-force if successful policy intervention yields a greater change in labour-force behaviour.

7.27 Similarly, this suggests that upper levels of employment growth could also be potentially supported through the provision of fewer than 2,275 dwellings per annum, although there remains a concern that such a level of provision would represent an unrealistic increase in the recent level of housing development in Belfast.

Concluding upon a reasonable level of population and household growth for Belfast

7.28 Drawing the analysis together, it is considered that a reasonable and credible level of population and household growth sits somewhere between Scenario 1 and Scenario 2, with the evidence implying that this should be nearer to Scenario 2.

7.29   The provision of between **1,600 – 1,800 dwellings per annum** over the plan period appears reasonable in light of these considerations and the latest information available. Planning for this level of housing would support baseline levels of employment growth in Belfast through a growth in labour-force, while allowing for changes in labour-force behaviour which appear reasonable in the context of historic evidence but recognise that future changes could result from a more positive economic context.

7.30   This is an issue which will require further consideration as the wider policy approach is developed. In the absence of successfully evidenced policy interventions, the labour-force assumptions applied within the POPGROUP modelling which underpins this level of housing provision are considered reasonable, drawing upon recognised local and national datasets.

7.31   In considering potential policy-led and justified changes to labour-force behaviour it is important to recognise the context set by the RDS which asserts that:

•   Over 50% of those who work in Belfast live outside it; and

•   Many of those living in Belfast have not benefited from the economic growth

7.32   Whilst it is beyond the scope of this report to assess the reality of policy interventions to address existing labour-force behaviours evidently achieving a greater level of self-containment of its workforce and an increased participation of those of working age in the economy would ensure that housing provision of this scale would be likely to be able to support the strong levels of employment growth forecast by UU. Ongoing work between BCC and UU will form an important context for evaluating this aspect. Overall, however, it is evident that growth of this scale would also result in positive demographic and economic outcomes for the city.

7.33   Provision of this scale would also uplift recent levels of development, with the upper end of this range some 88% higher than the recent trend[41]. Whilst the scale of this uplift remains ambitious, it also appears realistic in light of the market's historic capacity to consistently deliver comparable levels of growth, recognising its cyclical nature. Further consideration will be required as to the potential deliverability of housing through the development of the plan to assess the extent to which higher or lower levels of housing could be realistically delivered.

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[41] Between 2008 and 2015, an average of 849 units were completed annually in Belfast (Figure 6.5)

Appendix 1: Larger Zonings in Belfast

Outer Belfast Land Zonings

BT002 - Mixed Use - Land at Monagh Bypass / Upper Springfield Road

This 36.08 ha site in West Belfast is zoned for mixed use in BMAP. Outline planning permission was granted for mixed use development in December 2013. The site has the potential to deliver a total of 450 housing units. A condition is attached to the planning permission which required 50% of the total yield to be social/affordable houses. The site is owned by the Diocese of Down & Conor. No applications for approval of reserved matters have been made to date.

Zoning WB 04/04 - Land between West Circular Road and Ballygomartin Road, either side of Forth River

The site is a 7.8 ha housing zoning in North Belfast. Full permission was granted on the site in June 2012 for a residential development consisting of 247 units. The permission is due to lapse 1st June 2017 and no works have commenced on the site to date.

It is understood that this site is now in new ownership following the administration of the company which previously owned the land and secured the planning permission. The change in ownership may prompt a review of delivery timescales.

Zoning WB 04/11 - Land between Glen Road, Glencolin Rise, Glencolin Grove, Meadowhill and Glen Road Heights

BMAP 2015 zones 12.64 ha of land off the Glen Road, Belfast. The site has a number of key site requirements;

- A Concept Statement to facilitate the comprehensive development of the site shall be submitted to and agreed with the Department;

- A minimum of 240 dwellings shall be provided for social housing;

- Access shall be agreed with DRD Roads Service - An improved right turn pocket, which may require third party land, shall be required on Glen Road into Glencolin Drive.

Planning permission was recently quashed in relation to development on a portion of the site which would see 93 social housing units delivered. The application has been remitted for re-determination by the Department for Infrastructure. There are no other live planning applications for housing on the zoning, which is in multiple ownership.

City Centre & Harbour Area Land Zonings

Zoning BHA 01 – Mixed Use Site – Titanic Quarter

An 87.31Ha site is zoned in Titanic Quarter for mixed use development which includes residential. BMAP 2015 requires any development of the site to be in line with the Development Framework for the area.

BMAP 2015 requires that The Titanic Quarter Development Framework shall provide for a minimum of 3,500 dwellings of which 10% - 15% shall be developed for social housing to be dispersed through Titanic Quarter.

The first phase of mixed use development in Titanic Quarter included the Arc Apartments which were approved in April 2006. The apartment block development consisted of 474 units which are now completed.

152 apartments are also proposed as part of a mixed use development on lands west of the former Harland and Wolff Drawing Offices, Queens Road. The proposals were approved in July 2011. Enabling works have begun on site but there is no indication yet as to when these dwelling units will be delivered.

Over the next 15 years additional phases of development are proposed which will provide approximately 5,000 new residential units.

Zoning CC 04/08 – Cromac Street/Raphael Street

This zoning is located off Cromac Street in Belfast City Centre. The brownfield site is 2.76Ha in size and is zoned for social housing.

There are no planning approvals or pending applications on the site for residential use. A portion of the site is currently used as temporary car parking.

It is unclear whether housing on this site will be coming forward in the near future.

Zoning CC 017 - Cathedral Way, North Street, Donegall Street, Lower Garfield Street and Rosemary Street (Opportunity Site)

This opportunity site zoned in BMAP 2015 and comprises retail and commercial properties located within the Scotch and Cathedral Character Area.

The zoning forms part of the 4.8Ha 'Royal Exchange' scheme - a £360m mixed use redevelopment scheme approved in September 2012.

The site has full approval for a variety of uses including retail, offices, café/bars, 2 retail pavilions, an energy centre, cultural centre, hotel and 205 apartments. The permission is due to expire in October 2017 and no works have commenced on the site.

It is understood that the when the site was purchased in March 2016, the buyers were drawing up new plans for the site. Therefore it is unclear how much housing may or may not be delivered as part of the revised proposals.

Zoning CC 020 – Sirocco Works (Opportunity Site)

The Sirocco works site consists of 6.14 ha of land on the edge of the city centre which is identified by BMAP 2015 as an opportunity site. It is the largest brownfield site within the City Centre, has a significant frontage to the River Lagan and is located in a strategic gateway position.

BMAP 2015 sets out a number of key site requirements which includes the need for a Concept Statement to be agreed in order to facilitate comprehensive development of the site.

There is a key site requirement for housing development which is limited to a maximum density of 140 dwellings per hectare.

There is an outline approval on the site for a major mixed use regeneration project which was granted in March 2011 and will expire in March 2023. The proposals comprise residential

development, own-door offices, a hotel, restaurants, cafes, call centres/research & development uses, assembly and leisure uses, local retail & professional service uses, a supermarket, community and cultural facilities, a care home, and areas of public realm.

The residential development element of the Masterplan for Sirocco included proposals to accommodate 2,000 residential units on the site.

The redevelopment of the site stalled when the property market crashed and the Carvill Group went into administration. At time of writing, it is understood that the site has the potential to be in new ownership in the reasonably near future.

Outer Settlement Zonings
Loughview, Hannahstown and Edenderry have been included in the new Belfast City Council District boundary and are therefore now included in the Housing Monitor Data.

There are no large scale housing zonings in Hannahstown, Loughview or Edenderry given their scale.

Appendix 2: Edge Analytics Demographic Modelling Methodology and Assumptions

Belfast City Council

Data inputs, assumptions & methodology

September 2016

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POPGROUP Methodology

Forecasting Methodology

1.1   Demographic forecasts have been developed using the POPGROUP suite of products. POPGROUP is a family of demographic models that enables forecasts to be derived for population, households and the labour force, for areas and social groups. The main POPGROUP model (Figure 1) is a cohort component model, which enables the development of population forecasts based on births, deaths and migration inputs and assumptions.

1.2   The Derived Forecast (DF) model (Figure 2) sits alongside the population model, providing a headship rate model for household projections and an economic activity rate model for labour-force projections.

1.3   For further information on POPGROUP, please refer to the Edge Analytics website: http://edgeanalytics.co.uk/popgroup.

Note: *'Forecast' is used throughout this document as a general term which encompasses both trend projections and housing-led and jobs-led forecasts.*
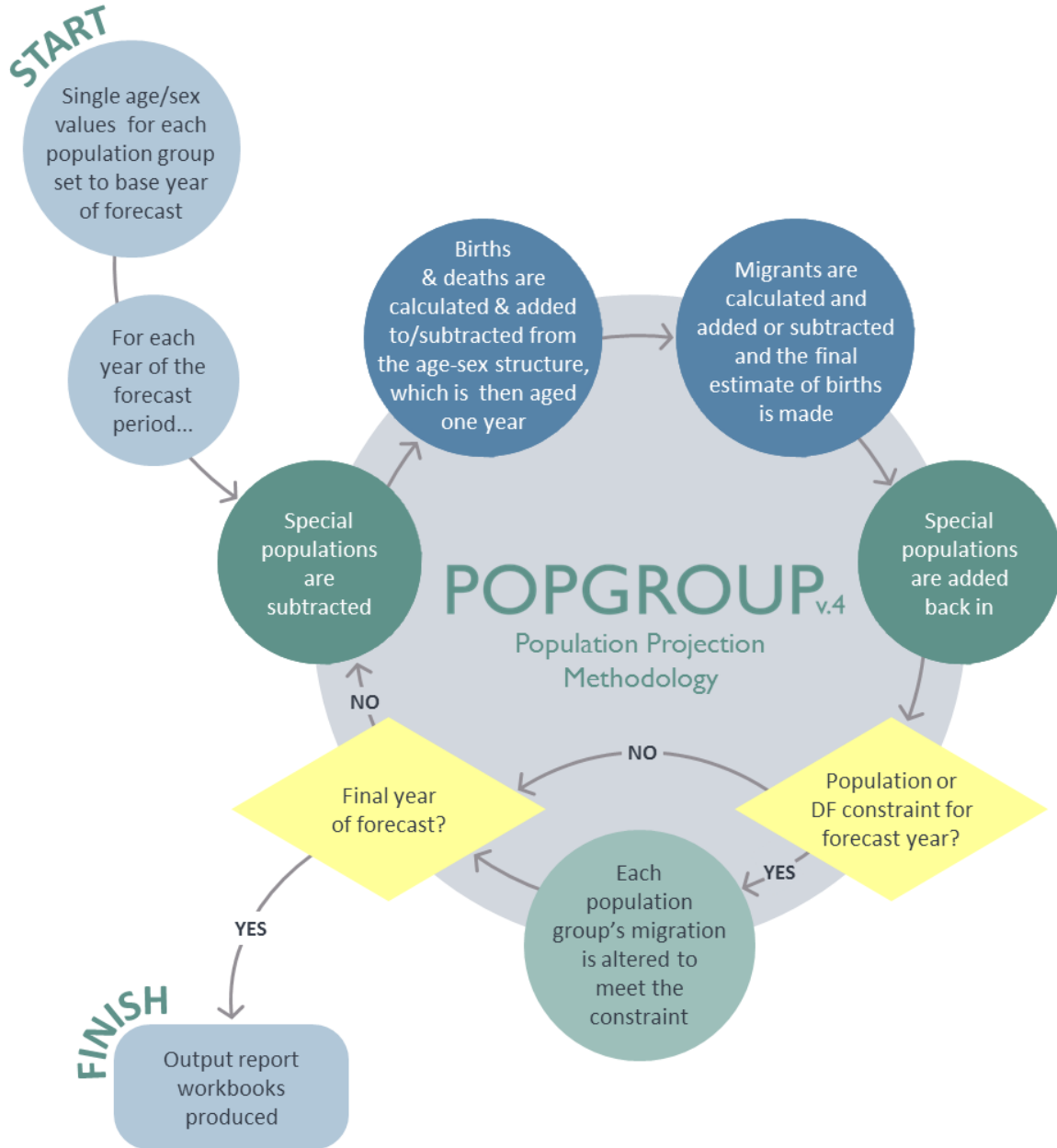
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START

Single age/sex values for each population group set to base year of forecast

For each year of the forecast period...

Births & deaths are calculated & added to/subtracted from the age-sex structure, which is then aged one year

Migrants are calculated and added or subtracted and the final estimate of births is made

Special populations are subtracted

POPGROUP v.4

Population Projection Methodology

Special populations are added back in

NO

Final year of forecast?

NO

Population or DF constraint for forecast year?

Each population group's migration is altered to meet the constraint
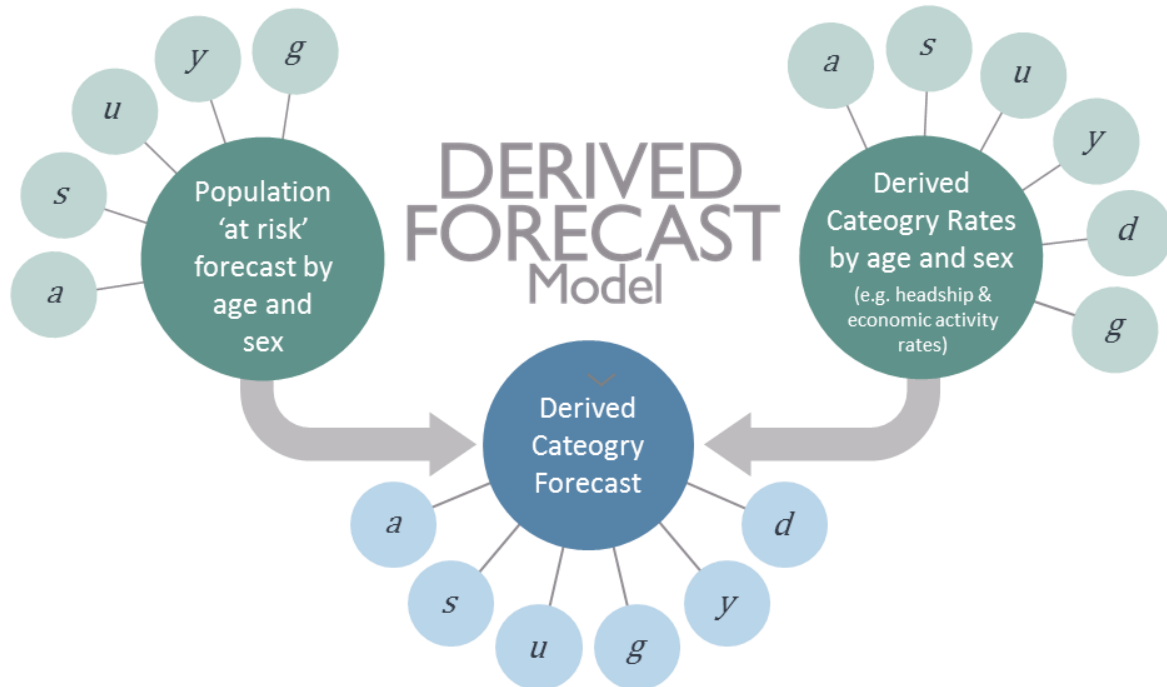
YES

YES

FINISH

Output report workbooks produced

Figure 1: POPGROUP population projection methodology

$$D_{a,s,u,y,d,g} = \frac{P_{a,s,u,y,g} \; R_{a,s,u,y,d,g}}{100}$$

D	Derived Category Forecast	y	Year
P	Population 'at risk' Forecast	d	Derived category
R	Derived Category Rates	g	Group (usually an area, but can be an ethnic group or social group)
a	Age-group		
s	Sex		
u	Sub-population		

Figure 2: Derived Forecast (DF) methodology

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2 Data Inputs & Assumptions

Introduction

2.1 Edge Analytics has developed a suite of demographic scenarios for Belfast Local Government District (LGD) using POPGROUP v.4 and the DF model. The POPGROUP suite of demographic models draws data from a number of sources, building an historical picture of population, households, fertility, mortality and migration on which to base its scenario forecasts. Using historical data evidence for 2001-2014, in conjunction with information from the Northern Ireland Statistics and Research Agency's (NISRA) Sub-National Population Projection (SNPP) and household projection, a series of assumptions have been derived which drive the scenario forecasts.

2.2 The following scenarios have been produced for the 2014-35 plan period:

- **PG-2yr**
- **SNPP-2014**
- **Jobs-led (Baseline)**
- **Jobs-led (Upper)**

2.3 In each scenario, household growth has been assessed using assumptions derived from the 2012-based household projection model from NISRA. These scenarios are identified by the '**HH-12**' suffix.

2.4 In addition, each scenario has been run using an alternative set of membership rates that was calculated to evaluate the impact of changing average household size in Belfast in line with the national (NI) trend from the 2012-based household projections. These scenarios are identified using the '**HH-12 R**' suffix. In the following sections, a narrative on the data inputs and assumptions underpinning the scenarios is presented.

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Scenario Definition

Official Projection

2.5 All scenarios are 'benchmarked' against the most recent official population projection from NISRA, the 2014-based SNPP, which was released in May 2016. The **SNPP-2014** scenario replicates this official population projection.

Alternative Trend Scenarios

2.6 The following 'alternative trend' scenario has been developed, based upon the latest demographic evidence:

- **PG-2yr**: internal migration rates and external migration flow assumptions are based on the last 2 years of historical evidence (2012/13 to 2013/14);

Jobs-led Scenarios

2.7 In a 'jobs-led' scenario, population growth is determined by the scale of future jobs growth within an area. Migration is used to balance the relationship between the size of the population's labour force and the forecast number of jobs. A higher level of net in-migration will occur if there is insufficient population and resident labour force to meet the forecast number of jobs. A higher level of net out-migration will occur if the population is too high relative to the forecast number of jobs.

2.8 Two employment forecasts have been used to develop the jobs-led scenarios for Belfast (Figure 3). Jobs growth forecasts have been provided for the 2014/15-2029/30 period. The last year's values (2029/30) have been fixed for the remainder of the forecast period.

- **Jobs-led (Baseline)**: demographic change is linked to the growth in jobs with the allowance for 'double jobbing' from the 'baseline' scenario of the Ulster University forecast;
- **Jobs-led (Upper)**: demographic change is linked to the growth in jobs with the allowance for 'double jobbing' from the 'upper' scenario of the Ulster University forecast.
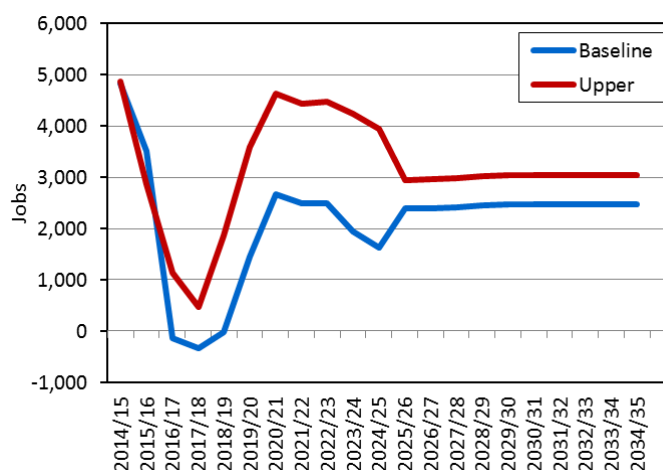
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Figure 3: Jobs growth forecasts, 2014/15-2034/35 *(Source: Ulster University, Turley)*

Population, Births & Deaths

Population

2.9   In each scenario, historical population statistics are provided by the mid-year population estimates (MYEs), with all data recorded by single year of age and sex. This includes the revised MYEs for the 2001-2010 time period. The revisions followed the release of the 2011 Census population estimates and were done do reconcile the MYEs with the 2001 and 2011 Census data[1].

2.10   In the **PG-2yr** and **SNPP-2014** scenarios, the historical MYEs are specified to 2014.

2.11   In the **SNPP-2014** scenario, future population counts are provided by single year of age and sex to ensure consistency with NISRA's 2014-based SNPP.

Births & Fertility

2.12   In each scenario, historical mid-year to mid-year counts of births have been sourced from NISRA's MYEs and are specified up to 2013/14.

2.13   In the **SNPP-2014** scenario, projected counts of births are specified from 2014/15 to ensure consistency with the 2014-based official projections.

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[1]http://www.nisra.gov.uk/archive/demography/population/midyear/Methodology_Population_Estimates_April_2013.pdf

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2.14   In all scenarios, a national age-specific fertility rate (ASFR) schedule, derived from the Office for National Statistics (ONS) 2014-based based National Population Projection (NPP) is included in the POPGROUP model assumptions. NISRA's 'scaling factor' taken from the 2014-based SNPP is used to scale the national schedule to reflect Belfast's characteristics.

2.15   Long-term assumptions on changes in ASFRs are taken from the ONS 2014-based NPP.

2.16   In combination with the 'population-at-risk' (i.e. all women between the ages of 15-49), ASFRs, the scaling factor and future fertility rate assumptions provide the basis for the calculation of births in each year of the forecast period.

Deaths & Mortality

2.17   In each scenario, historical mid-year to mid-year counts of deaths have been sourced from NISRA's MYEs and are specified up to 2013/14.

2.18   In the **SNPP-2014** scenario, projected counts of deaths are specified from 2014/15 to ensure consistency with the 2014-based official projections.

2.19   In all scenarios, a national age-specific mortality rate (ASMR) schedule, derived from the ONS 2014-based based NPP is included in the POPGROUP model assumptions. NISRA's scaling factors by age taken from the 2014-based SNPP are used to scale the national schedule to reflect Belfast's characteristics.

2.20   Long-term assumptions on changes in ASMRs are taken from the ONS 2014-based NPP.

2.21   In combination with the 'population-at-risk' (i.e. the whole population), ASMRs, the scaling factors and future mortality rate assumptions provide the basis for the calculation of deaths in each year of the forecast period.

Armed Forces

2.22   In all scenarios, an account has been taken of the armed forces population. Estimates of armed forces in Belfast have been sourced from the Ministry of Defence's (MoD) Quarterly Location Statistics[2].

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[2]https://www.gov.uk/government/statistics/location-of-uk-regular-service-and-civilian-personnel-quarterly-statistics-2016

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Migration

2.23   NISRA distinguishes three migration flows: internal (within NI), GB (between NI and the rest of the UK) and international (between NI and the rest of the world). The GB and international migration together make up 'external' migration. In the modelling, internal and external migration flows are used.

Internal Migration

2.24   In each scenario, historical mid-year to mid-year estimates of internal in- and out-migration by 5-year age group and sex have been provided by NISRA up until 2013/14 and sourced from the MYEs.

2.25   In the **SNPP-2014** scenario, future counts of migrants are specified from 2014/15. NISRA has only provided an overall net migration flow in its SNPP published output. For this reason, the future in- and out-migration flows have been estimated and calculated as a 5-year average of historical flows 2009/10 to 2013/14[3].

2.26   In the **PG-2yr** scenario, the historical data (2012/13-2013/14) is used to derive the age-specific migration rate (ASMigR) schedule, which is then used to determine the future number of internal in- and out-migrants from 2014/15.

2.27   In the case of internal in-migration, the ASMigR schedules are applied to an external 'reference' population (i.e. the population 'at-risk' of migrating *into* the area). This is different to the other components (i.e. births, deaths, internal out-migration, international migration), where the schedule of rates is applied to the area-specific population. The reference population comprises Northern Ireland's 'national' population minus population of Belfast itself.

External Migration

2.28   In each scenario, historical mid-year to mid-year estimates of external in- and out-migration by 5-year age group and sex have been provided by NISRA up until 2013/14 and sourced from the MYEs.

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[3] NISRA's documentation states that migration assumptions in the 2014-based SNPP are based on the 2010/11-2014/15 period. However, the 2014/15 MYE data has not been released yet. Therefore, 2009/10-2013/14 time period was used instead.

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2.29   In the **SNPP-2014** scenario, future counts of migrants are specified from 2014/15. NISRA has only provided an overall net migration flow in its SNPP published output. For this reason, the future external in- and out-migration flows have been estimated and calculated as a 5-year average of historical flows 2009/10 to 2013/14[4]. The external out-migration flow has been further adjusted to ensure the overall net migration flow is consistent with the official projections.

2.30   In the **PG-2yr** scenario, future external in- and out-migration counts are specified from 2014/15 onwards and are based on a 2-year history (2012/13-2013/14). Corresponding ASMigR schedules are derived and used to distribute future counts by single year of age.

Households & Dwellings

2.31   The 2011 Census defines a household as: *"one person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area."*

2.32   In POPGROUP, a dwelling is defined as a unit of accommodation which can either be occupied by one household or vacant.

2.33   In all scenarios, the household and dwelling implications of the population growth trajectory have been evaluated through the application of household membership rate statistics, communal population statistics and a dwelling vacancy rate. These data assumptions have been estimated from the 2011 Census and the latest 2012-based household projection model from NISRA.

Household Membership Rates

2.34   The NISRA household projections are derived through the application of projected household membership probabilities to a projection of the private household population. However, area-specific household membership rates underlying NISRA's projections have not been made publically available.

2.35   For this reason, in the POPGROUP configuration for Belfast, the 2012-based membership rates have been estimated to ensure the published household totals by household size and year are

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[4] NISRA's documentation states that migration assumptions in the 2014-based SNPP are based on the 2010/11-2014/15 period. However, the 2014/15 MYE data has not been released yet. Therefore, 2009/10-2013/14 time period was used instead.

reproduced. The derived rates determine the likelihood of a person being a member of a household of a particular size in a particular year, given the age-sex structure of the population.

Communal Population Statistics

2.36   Household projections in POPGROUP exclude the population 'not-in-households' (i.e. the communal/institutional population). These data have been drawn from the 2011 Census table DC1101NI. Examples of communal establishments include prisons, residential care homes and student halls of residence.

2.37   Using the 2011 Census data, proportions of communal population by sex and age group have been calculated. Using proportions rather than counts allows the communal populations to vary across the forecast period depending on the size of the total population. The initial proportions have been further adjusted to ensure consistency with NISRA's 2012-based household projection totals by year.

Vacancy Rate

2.38   The relationship between households and dwellings in all scenarios is modelled using a 'vacancy rate', sourced from the 2011 Census. The vacancy rate is calculated using statistics on households (occupied, second homes and vacant) and dwellings (shared and unshared) from the 2011 Census table KS401NI.

2.39   A vacancy rate of **6.6%** has been calculated for Belfast. This vacancy rate has been applied in all scenarios and kept fixed throughout the forecast period. Using this vacancy rate, a 'dwelling requirement' of each household growth trajectory has been derived.

Labour Force & Jobs

2.40   In the **SNPP-2014** and the **PG-2yr** scenarios, the labour force and jobs growth implications of the population growth trajectory have been evaluated through the application of three key assumptions: economic activity rates, a commuting ratio and an unemployment rate.

2.41   In the **jobs-led** scenarios, these three data items are used to determine the population growth required by the defined jobs growth trajectories.

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Economic Activity Rates

2.42   The economic activity rates determine the size of the labour force. The labour force includes those in employment and those who are unemployed.

2.43   Using a combination of economic activity data from the 2011 Census for the 'old' (pre-April 2015)[5] and the 'new' Belfast LGD[6], a set of economic activity rates by sex and age (16-75+) has been calculated. These rates have been then modified for all age groups (16-75+) from 2011 to 2031 in line with the Office for Budget Responsibility's (OBR) labour market analysis[7]. From 2031 the rates are unchanged.

2.44   Figure 4 illustrates changes in economic activity rates between the 2011 Census-based rates and rates in 2031 if the OBR adjustment is applied.
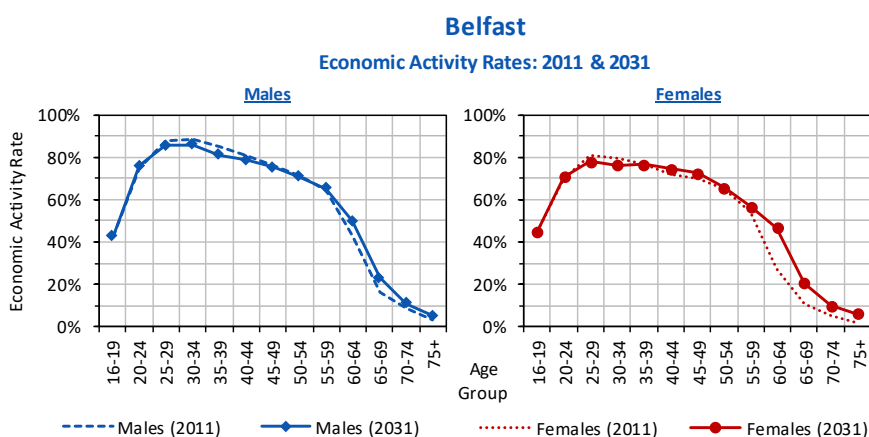

Figure 4: Belfast economic activity rates: 2011 and 2031 *(Source: 2011 Census, OBR, Edge Analytics)*

Unemployment Rates

2.45   The unemployment rate, together with the commuting ratio, controls the balance between the size of the labour force and the number of jobs available within an area.

2.46   Historical unemployment rates have been calculated using data from the Labour Force Survey (LFS). A 2-year average (2013-14) of unemployment rates is applied in all scenarios and kept fixed throughout the forecast period (Table 1).

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[5] 2011 Census table DC6101NI
[6] 2011 Census table KS602NI & CT0194NI
[7] http://cdn.budgetresponsibility.org.uk/41298-OBR-accessible.pdf

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Table 1: Unemployment rates, 2009-2014 (Source: LFS, Edge Analytics)

	2009	2010	2011	2012	2013	2014	Av. 2013-14
Belfast	9.4%	6.6%	9.0%	11.8%	6.1%	6.3%	**6.2%**

2.47   As an additional sensitivity, projected unemployment rates have been modified in the **Jobs-led (Baseline)** and **Jobs-led (Upper)** scenarios to test the impact of reduction in the unemployment rate based on the assumption that 10% of the new jobs in each scenario is taken by the unemployed.

2.48   For the **Jobs-led (Baseline)** scenario the base year unemployment rate of 6.2% reduces to 3.9% by the end of the forecast period. For the **Jobs-led (Upper)** scenario, the base year rate reduces to 3.0% over the same period.

Commuting Ratio

2.49   The commuting ratio, together with the unemployment rate, controls the balance between the number of workers living in a district (i.e. the resident labour force) and the number of jobs in the district.

2.50   A commuting ratio greater than 1.00 indicates that the size of the resident workforce exceeds the number of jobs available in the district, resulting in a net out-commute. A commuting ratio less than 1.00 indicates that the number of jobs in the district exceeds the size of the labour force, resulting in a net in-commute.

2.51   Using the 2011 Census 'Travel to Work' statistics, a commuting ratio of **0.61** has been derived for Belfast, indicating a high net in-commute into the area from elsewhere in NI. This commuting ratio is applied in all scenarios and remains unchanged throughout the forecast period.

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Appendix 3: Converting Population into Dwellings

Household Formation Rates

In order to derive a projection of household growth in Belfast, household formation rates from the 2012-based sub-national household projections (SNHP) have been applied to the latest 2014-based SNPP dataset by Edge Analytics.

The following chart illustrates the projected change in household size under the 2012-basd SNHP for Belfast. This is compared with Northern Ireland and England for context.

Figure 3.1   Projected Change in Household Size Belfast City, Northern Ireland and England
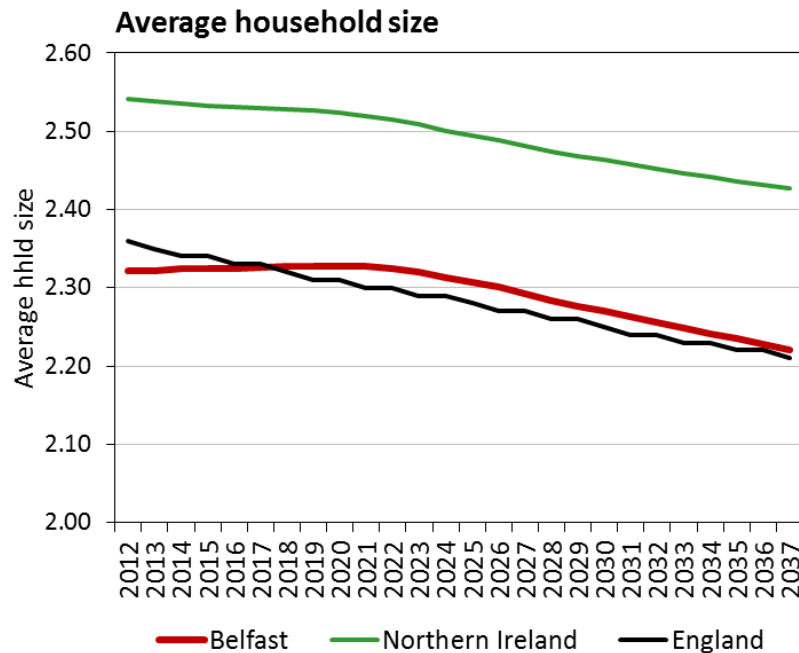
Source: NISRA, ONS, 2015

It is apparent that whilst NI as a whole has a larger average household size, Belfast more closely aligns with the average seen in England. The differing trajectories of change, however, are important to note.

Whilst both NI and England are projected to see a continued fall in household size from 2012 to 2037, Belfast is projected to see its household size increase until around 2021 before following a trend which is more closely aligned to both England and NI. This has an implication for the comparative rate of household membership rates for the population of Belfast when compared with the national projections in NI and England.

The projected change in household size is underpinned by assumptions around the comparative propensities of households of different ages to form (referenced in the NISRA

household projections as Household Membership Rates). Detailed local data relating to these aspects of the dataset is not currently available from NISRA. However, in the national dataset, it is widely recognised that projected change in household size is influenced by a continuation of recent trends, which has seen younger households in particular less likely to form households since 2001. Nationally, this was a point at which the relationship between house prices and incomes began to depart from long-term trends.

There is a significant body of evidence within England which has considered this issue and highlighted the comparatively negative assumptions implicit within the dataset on this basis, particularly with regards to the assumed future changes of younger households to form independent households.

Noting the evident deviation of Belfast, household size assumptions from the England picture potentially suggests that this issue is even more acute in the LGD. This issue is further considered in section 4 following a review of market signals, with the comparative operation of the housing market an important potential factor in enabling younger households in particular to form.

NISRA intend to publish an updated set of 2014-based SNHP towards the end of 2016. This will take into account a further two years of data from the 2012-based dataset, and will involve the updating of assumptions on household formation rates by individual age groups. The implications of this dataset will need to be considered upon release to understand the extent to which they suggest a notable departure from the rates assumed within the 2012-based dataset.

Allowance for Vacancy and Second Home Ownership

The application of household formation rates to the population projection for Belfast provides a projection of household growth. This can be converted into a need for dwellings through the application of a vacancy rate assumption. This recognises that there will continue to be a level of 'churn' within the market, with a greater number of dwellings than households.

In producing the 2012-based HGIs, NISRA used three different data sources to consider the level of vacancy to be applied at a Northern Ireland level:

• Census 2011 data – 6%;

• NI House Condition Survey (NIHCS) 2011 – 7.2%; and

• Central Survey Unit (CSU) combined survey sample 2013-14 – 7.7%.

At a Northern Ireland level, NISRA considered the NIHCS an appropriate indicator of vacancy, noting that it sat between the vacancy levels implied by the Census and CSU survey. A variant set of HGIs using 'lower estimates' is also presented, applying the Census vacancy rate.

The HGIs also apply a further allowance in addition to the vacancy assumption for second home ownership. The preferred data source is again the 2011 NIHCS data, which suggests an additional 1.4% of occupied stock being vacant as a result of second home ownership.

In producing the HGIs, it is noted that the 2011 NIHCS data is not robust at LGD level. In order to apportion the assumed levels of vacant properties or second homes at LGD level, the CSU

dataset has therefore been used by NISRA. On this basis, the overall number of vacant properties at a Northern Ireland level – based upon the NIHCS data – is distributed between the authorities on the basis of the proportionate split in the CSU data.

A vacancy rate of 6.6% has been applied for Belfast by Edge Analytics, which is derived directly from Census 2011 data[42] and compares with the equivalent 6.0% for Northern Ireland. This proportion is based upon analysis of the number of household spaces recorded by the Census as not being occupied by a usual resident on the Census date. The Census definition confirms that vacant household spaces and household spaces that are used as second addresses are also classified in the Census results as households with no usual residents.

Through engagement on this research, NISRA recommended caution in using the CSU data at LGD level, highlighting its reliance upon survey inputs and noting that the samples used are selected to be representative of Northern Ireland. Where survey interviewers have found no-one available for interview, properties have been classified as vacant, with this then broken down further into classifications including second home ownership, for example. NISRA stressed that the estimates of second home ownership based upon this data should only be used for guidance and are not intended to represent official data on second homes. The datasets provided indicated that vacancy in Belfast was in the region of 9.6%, a level which is higher than the Northern Ireland average of 7.7%. The data also suggested a rate of second home ownership of 1.3%, in line with the Northern Ireland average.

In developing the 2012 based HGIs, it is understood that a vacancy rate (vacancy and second homes) of closer to 11% has been applied for Belfast to derive estimates of housing need for Belfast LGD.

Recognising the stated limitations of the survey based data, Census 2011 data has been used as a robust proxy of the proportion of properties potentially unoccupied during any given year of the projection period. It is noted that this may serve to underestimate future vacancy rates whereby a consistent methodology was applied to that used by NISRA in deriving the HGIs.

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[42] Table KS401NI 'Dwellings, Household Spaces and Accommodation Type'

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