



JULY 2021

# Housing, Economic Growth and Demographic Modelling

Sheffield City Council

Iceni Projects Limited on behalf of  
Sheffield City Council

July 2021

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ICENI PROJECTS LIMITED  
ON BEHALF OF SHEFFIELD  
CITY COUNCIL

Housing, Economic Growth and  
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## CONTENTS

1.	INTRODUCTION .....	1
2.	STANDARD METHOD .....	3
3.	DEMOGRAPHIC TRENDS .....	7
4.	DEMOGRAPHIC PROJECTIONS .....	14
5.	DEVELOPING BESPOKE POPULATION PROJECTIONS.....	21
6.	THE LINK BETWEEN HOUSING AND ECONOMIC GROWTH .....	26
7.	ECONOMIC LED HOUSING NEED.....	34
8.	SENSITIVITIES TO ECONOMIC ACTIVITY RATES.....	41
9.	SUMMARY .....	46

### APPENDICES

#### A1. MODELLING OUTPUTS

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# 1. INTRODUCTION

- 1.1 Icen Projects (Iceni) has been appointed by Sheffield City Council (the Council) to examine the link between housing and jobs in the city. Specifically, the work is to provide a robust evidence base illustrating the relationship between housing requirements and jobs growth over the Sheffield Plan period (2021-38).
- 1.2 This is to ensure that the housing requirement in the Local Plan supports the city's economic aspirations taking into account the Regional Econometric Model and the latest demographic evidence.
- 1.3 This report firstly examines the population growth associated with the Standard Method and number of jobs likely to be supported. The Standard Method is a formula set out in the National Planning Policy Framework (NPPF) and associated Planning Practice Guidance (PPG) to provide a figure for the minimum number of homes needed in each local authority area.
- 1.4 Secondly, in the context of the economic growth scenarios provided by Experian through the Regional Econometric Model (REM), the report considers the expected level of housing required to support those levels of growth.
- 1.5 Finally, we have been provided with the April 2021 Experian baseline which will feed into the Employment Land Review Update being produced by Lichfields.
- 1.6 There are therefore six scenarios considered:
- **Standard Method** – Housing need derived from the Standard Method, converted to population and then employment growth;
  - **Issues and Options Housing Requirement** – Housing requirement from the issues and options consultation converted to population and then employment growth (Standard method without 35% uplift);
  - **Baseline** – Jobs growth from the Regional Econometric Model forecast converted to population and then housing growth;
  - **Policy-On** – Jobs growth based the 2015 Strategic Economic Plan converted to population and then housing growth (this scenario is virtually identical in job numbers to past trends);
  - **Midpoint** – Jobs growth based on a midpoint between the baseline and policy-on scenarios (again converted to population and then housing growth); and
  - **Updated Forecasts** – Jobs growth based on the April 2021 Experian baseline forecasts.
- 1.7 The approach is designed to provide a consistent understanding of housing and jobs levels to inform the Local Plan process. All analysis covers the period from 2021 to 2038. The Economic Forecasts used are from 2019 and therefore do not reflect the impact of the Covid-19 Pandemic.

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- 1.8 While this may impact short term economic growth it is not expected to impact longer term growth with most forecasting houses and the Office for Budget Responsibility (OBR) expecting a full recovery.
- 1.9 By using pre-pandemic economic forecasts, we avoid the short-term reduction in jobs (and increase in unemployment) and higher levels of recovery shown in more recent forecasts. However, as the short-term decline and higher levels of growth associated with the recovery are in effect a reabsorption of the unemployed workforce this does not impact the overall level of jobs growth or housing need.

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## 2. STANDARD METHOD

- 2.1 The first step for moving from housing to jobs is to identify the local housing need as calculated using the Standard Method. The methodology used in this report responds to the NPPF (2019) which sets out the Government's objective to significantly boost housing supply, and the current PPG.
- 2.2 Chapter 5 of the NPPF (2019) relates to delivering a sufficient supply of homes, with Paragraph 60 setting out that *"to determine the minimum number of homes needed, strategic policies should be informed by a local housing need assessment, conducted using the standard method"*. This is the purpose of this element of the Study.
- 2.3 The Planning Practice Guidance on *Housing & economic needs assessments* requires that housing need be assessed using the government's Standard Methodology. The Standard Methodology seeks to simplify the approach to housing need and has four components:
- Starting Point or Baseline;
  - Affordability/Market Signals Adjustment;
  - Cap to ensure deliverability; and
  - Cities and Urban Centres Uplift
- 2.4 The starting point or demographic baseline continues to be the government's 2014-based sub-national household projections (SNHP) as stated in the PPG<sup>1</sup>. The baseline household growth is then modified to account for affordability. Specifically, Step 2 uses a formula which draws on the local median price of homes relative to median workplace earnings. This data is published annually by the Ministry of Housing Communities and Local Government (MHCLG) with the most recent data from 2020<sup>2</sup>.
- 2.5 To ensure that the proposed level of housing is as deliverable as possible, the standard method includes a cap at 40% above the housing target in adopted local plans which are less than 5 years old. Where local plans are older than five years then the Local Housing Need (LHN) is capped 40%

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<sup>1</sup> Housing and economic needs assessment Paragraph: 004 Reference ID: 2a-004-20190220, Step 1, available at:

<https://www.gov.uk/guidance/housing-and-economic-development-needs-assessments> (Revision date: 20 February 2019)

<sup>2</sup> Available at:

<https://www.ons.gov.uk/peoplepopulationandcommunity/housing/datasets/ratioofhousepricetoworkplacebasedearningslowerquartileandmedian> (Released 25th March 2021)

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above the higher of either the baseline growth from official projections (step 1) or the annual housing requirement figure currently set out in their local plan.

2.6 The latest and final step in the Standard Method is a 35% uplift to the housing need of local authorities in the largest top 20 cities and urban centres. These areas are determined by ranking the population in ONS' cities and urban centres list. This is to ensure housing growth is targeted in the most sustainable locations.

2.7 Our approach below sets out the standard method for Sheffield using the four-step approach as set out in the PPG.

### **Step 1 – Setting the baseline**

2.8 Step 1 sets the baseline using national household growth projections (2014-based household projections). The PPG advises that “the projected average annual household growth over 10 years (this should be 10 consecutive years, with the current year being the first year)” should be used.

2.9 The 2014-based Household projection for Sheffield is presented in the table below. These show a total household growth of 19,472 over the next ten years which is annualised to 1,947 dpa.

**Table 2.1 LHN Step 1 – Household Change, 2021-31**

Local Authority	Households 2021	Households 2031	Average Annual Change (Step 1)
Sheffield	249,478	268,950	1,947

Source: ONS, 2014-based household projections

### **Step 2 – An adjustment to take account of affordability**

2.10 Step 2 then adjusts the average annual projected household growth figure (as calculated in Step 1) based on the relative affordability of housing within each area. This draws on the most recent median workplace-based affordability ratios, namely the 2020 affordability ratios<sup>3</sup>.

2.11 For every percentage point the median workplace-based affordability ratio is above 4, the household projections are increased by 0.25%. Four is seen by the PPG as a reasonable multiple based on standard mortgage lending practices. The formula included in the PPG for how the adjustment is calculated is as below:

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<sup>3</sup> Published March 2021.

$$\text{Adjustment factor} = \left( \frac{\text{Local affordability ratio} - 4}{4} \right) \times 0.25$$

2.12 The table below presents the affordability ratio and the adjustment factor for Sheffield together with the resultant uncapped need. The affordability ratio is 5.79 in Sheffield meaning that median house prices in the city are 5.79 times median earnings. Applying this ratio to the formula above results in an increase of 11%.

**Table 2.2 LHN Step 2 – Affordability Adjustment Factor**

Local Authority	Average Annual Change (Step 1)	Affordability Ratio 2020	Adjustment Factor	LHN Uncapped (Step 2)
Sheffield	1,947	5.79	111.2%	2,165

Source: ONS, MHCLG

2.13 The affordability adjustment increases the need by 218 additional dwellings per annum to arrive at an uncapped need of 2,165 dpa.

### Step 3 – Capping the level of any increase

2.14 The third step of the standard method is to cap the level of increase to help ensure that the minimum local housing need figure is as deliverable as possible. What figure the 40% cap is placed on depends on the age of the Local Plan and the housing target within it.

- Where the Local Plan is adopted within the last 5 years (at the point of making the calculation), the local housing needs figure is capped at 40% above the existing housing target.
- Where the Local Plan was adopted more than 5 years ago (or is non-existent) then the cap is placed at 40% above the higher of either the existing housing target or the household forecasts set out in step 1.

2.15 The Sheffield Local Plan was adopted in April 2009 with an averaged housing requirement of 1,352. The cap is therefore calculated as 40% above the projected household growth (1,947) as this is greater than the housing requirement. This means that the housing need would be capped at 2,726 dpa however Step 2 only calculates a need for 2,165 dpa therefore the capping in this case does not impact the level of housing need in the city.

2.16 The table below summarises the age of the current Local Plan as well as its housing targets, and the figures involved in considering a cap.

**Table 2.3 LHN Step 3 – Capping the Need**

Local Authority	Average Annual HH Change (Step 1)	Un-capped LHN (Step 2)	Current Local Plan Adoption Date	Local Plan Housing Target	Capped Figure (Step 1 +40%)	LHN (Step 3)
Sheffield	1,947	2,165	4 <sup>th</sup> April 2009	1,352	2,726	2,165

Source: Icen Analysis

#### **Step 4 – Cities and Urban Centres Uplift**

- 2.17 The final step in the calculation is fairly straightforward in that it applies a 35% uplift to the 20 largest urban areas in the country, a list which includes Sheffield. Applying this increase to the 2,165 increases the overall need for the city by 758 dpa.

**Table 2.4 Step 4 – Cities and Urban Centres Uplift**

	Housing Need (Step 3)	Urban Centres Uplift	Urban Uplift/LHN (Step 4)
Sheffield	2,165	35%	2,923

Source: Icen Analysis

- 2.18 The minimum figure for Sheffield under the standard method is therefore 2,923 dpa. This is a 976 dpa uplift from the baseline household projections. While this is calculated over a ten year period it can be applied across the whole plan period, this equates to a total need of 49,691 homes over the period 2021-2038.
- 2.19 The following chapters examine recent demographic trends in order to translate this level of housing growth into a population and labour force growth.

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### 3. DEMOGRAPHIC TRENDS

3.1 This section of the report considers demographic trends, in particular looking at past trends in population growth and future projections. The analysis draws on the 2018-based subnational population projections (SNPP) and the 2018-based household projections (SNHP) – both ONS data releases. The analysis also looks at the most recent population estimates (again from ONS) which date to mid-2019.

#### Demographic Trends

3.2 The analysis below looks at some key statistics about demographic trends in Sheffield; particularly focussing on past population growth and the reasons for changes (components of change). This information is provided to help give some context for analysis to follow.

3.3 The table below shows the population profile of Sheffield in five-year age bands compared with a range of other areas. The key difference between areas is the relatively high proportion of the population in Sheffield aged 20-24, which will be linked to the student population of the city. For all age groups 45 onwards, the proportion of the population in Sheffield is lower than regionally or nationally.

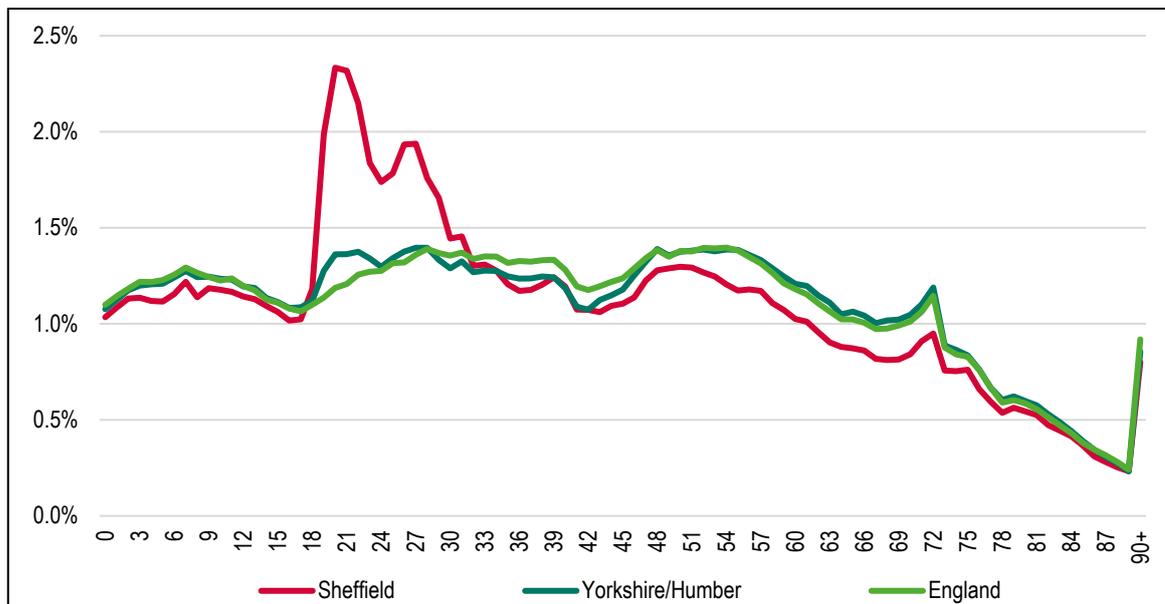
Table 3.1 Population profile (2019)

	Sheffield Population	Sheffield % of population	Yorkshire/ Humber % of population	England % of population
0-4	32,212	5.50%	5.80%	5.90%
5-9	34,000	5.80%	6.20%	6.30%
10-14	33,382	5.70%	6.00%	6.00%
15-19	36,672	6.30%	5.70%	5.50%
20-24	60,681	10.40%	6.70%	6.20%
25-29	53,034	9.10%	6.80%	6.80%
30-34	39,693	6.80%	6.40%	6.80%
35-39	35,095	6.00%	6.20%	6.60%
40-44	32,141	5.50%	5.60%	6.10%
45-49	35,304	6.00%	6.50%	6.60%
50-54	36,906	6.30%	6.90%	6.90%
55-59	33,363	5.70%	6.60%	6.50%
60-64	27,930	4.80%	5.70%	5.50%
65-69	24,428	4.20%	5.10%	5.00%
70-74	24,630	4.20%	5.10%	4.90%
75-79	18,218	3.10%	3.50%	3.40%
80-84	14,041	2.40%	2.60%	2.60%
85+	13,123	2.20%	2.40%	2.50%
<b>All Ages</b>	<b>584,853</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Source: ONS

3.4 The differences between Sheffield and other areas can more clearly be seen in the figure below. Features include a high population aged 18-21 (linked to students) but also a smaller 'spike' for people in their late 20s. The figure also shows the lower proportion of people aged from about 45 or older.

**Table 3.2 Population profile (2019)**



Source: ONS mid-year population estimates

3.5 The analysis below summarises the above information by assigning population to three broad age groups (which can generally be described as a) children, b) working-age and c) pensionable age). This analysis shows that, compared with the regional and national position, Sheffield has a slightly younger age profile, with a particularly high proportion of people aged 16-64.

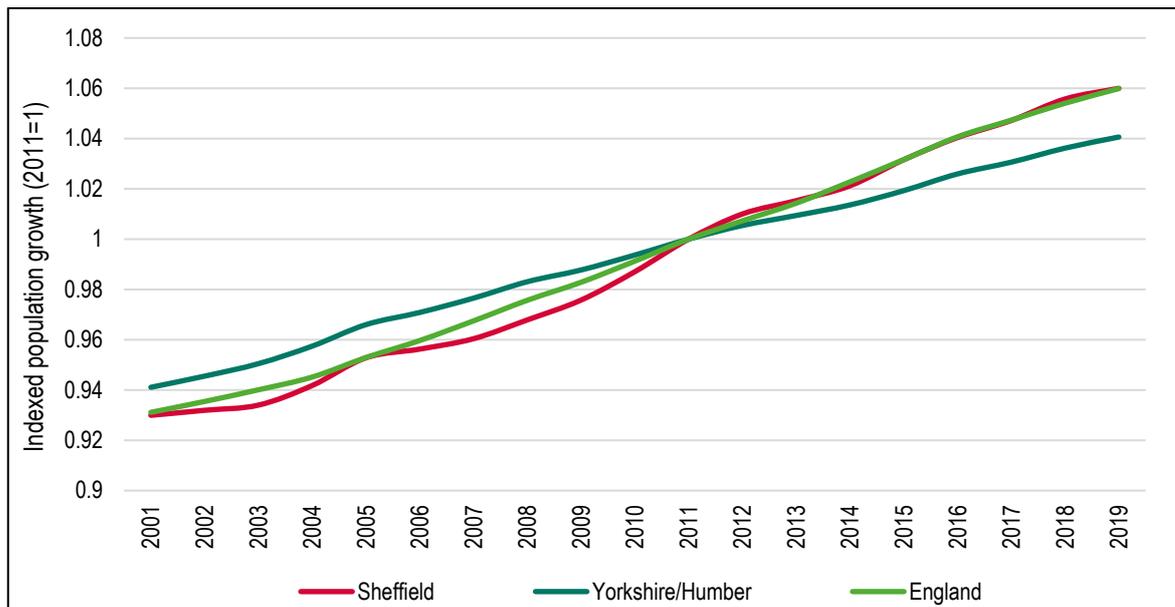
**Table 3.3 Population profile (2019) – summary age bands**

	Sheffield Population	Sheffield % of population	Yorkshire/Humber % of population	England % of population
<b>Under 16</b>	105,803	18.1%	19.1%	19.2%
<b>16-64</b>	384,610	65.8%	62.1%	62.4%
<b>65+</b>	94,440	16.1%	18.8%	18.4%
All Ages	<b>584,853</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: ONS mid-year population estimates

3.6 The figure below considers population growth in the period from 2001 to 2019 (indexed to 2011). The analysis shows over this period that the population of Sheffield has risen at a virtually identical rate to that seen nationally, and at a faster rate than seen across the region. In 2019, it is estimated that the population of the city had risen by 14% from 2001 levels, this is in contrast to an 11% rise across the region and 14% nationally.

**Table 3.4 Indexed population growth (2001-2019)**



Source: ONS (mid-year population estimates)

3.7 The table below considers population change over the 8-year period to 2019 (an 8-year period being chosen as the start point of 2011 has data at a smaller area level and is likely to be as accurate as possible as it draws on information in the Census). The analysis shows over the period that the population of Sheffield increased by 6%; this is the same level of population change as seen nationally and compares with an increase of 4.1% for the Yorkshire/Humber region.

**Table 3.5 Population change (2011-19)**

	Population (2011)	Population (2019)	Change	% change
Sheffield	551,756	584,853	33,097	6.0%
Yorkshire/Humber	5,288,212	5,502,967	214,755	4.1%
England	53,107,169	56,286,961	3,179,792	6.0%

Source: ONS mid-year population estimates

3.8 The table below shows population change by age (again for the 2011-19 period). This generally identifies the greatest increases to be in older age groups (aged 65 and over) along with some notable population increases in the 25-29 and 50-59 age groups. The city also saw some population declines, particularly those aged 40-44.

**Table 3.6 Population change by age (2011-19) – 5-year age bands (Sheffield)**

	Population (2011)	Population (2019)	Change	% change
<b>0-4</b>	33,917	32,212	-1,705	-5.0%
<b>5-9</b>	30,469	34,000	3,531	11.6%
<b>10-14</b>	30,146	33,382	3,236	10.7%
<b>15-19</b>	40,035	36,672	-3,363	-8.4%
<b>20-24</b>	56,848	60,681	3,833	6.7%
<b>25-29</b>	38,944	53,034	14,090	36.2%
<b>30-34</b>	35,976	39,693	3,717	10.3%
<b>35-39</b>	34,614	35,095	481	1.4%
<b>40-44</b>	39,284	32,141	-7,143	-18.2%
<b>45-49</b>	36,715	35,304	-1,411	-3.8%
<b>50-54</b>	32,499	36,906	4,407	13.6%
<b>55-59</b>	27,598	33,363	5,765	20.9%
<b>60-64</b>	28,528	27,930	-598	-2.1%
<b>65-69</b>	24,461	24,428	-33	-0.1%
<b>70-74</b>	20,482	24,630	4,148	20.3%
<b>75-79</b>	16,883	18,218	1,335	7.9%
<b>80-84</b>	12,508	14,041	1,533	12.3%
<b>85+</b>	11,849	13,123	1,274	10.8%
<b>All Ages</b>	<b>551,756</b>	<b>584,853</b>	<b>33,097</b>	<b>6.0%</b>

Source: ONS mid-year population estimates

- 3.9 This information has been summarised into three broad age bands to ease comparison. The table below shows a modest increase in the number of children living in the city (increasing by about 5%) along with a similar increase in the 'working-age' population. One of the key drivers of population growth has therefore been in the 65 and over age group, which between 2011 and 2019 saw a population increase of about 8,300 people; this age group increasing in size by 10% over the 8-year period.

**Table 3.7 Change in population by broad age group (2011-19) – Sheffield**

	2011	2019	Change	% change
<b>Under 16</b>	100,656	105,803	5,147	5.1%
<b>16-64</b>	364,917	384,610	19,693	5.4%
<b>65+</b>	86,183	94,440	8,257	9.6%
<b>TOTAL</b>	<b>551,756</b>	<b>584,853</b>	<b>33,097</b>	<b>6.0%</b>

Source: ONS

### Components of Population Change

- 3.10 The table and figure below consider the drivers of population change 2001 to 2019. The main components of change are natural change (births minus deaths) and net migration (internal/domestic and international). There is also an Unattributable Population Change (UPC) which is a correction made by ONS upon publication of Census data if population has been under- or over-estimated and Other changes, which are generally small and often related to prison populations, armed forces personnel or boarding school pupils.

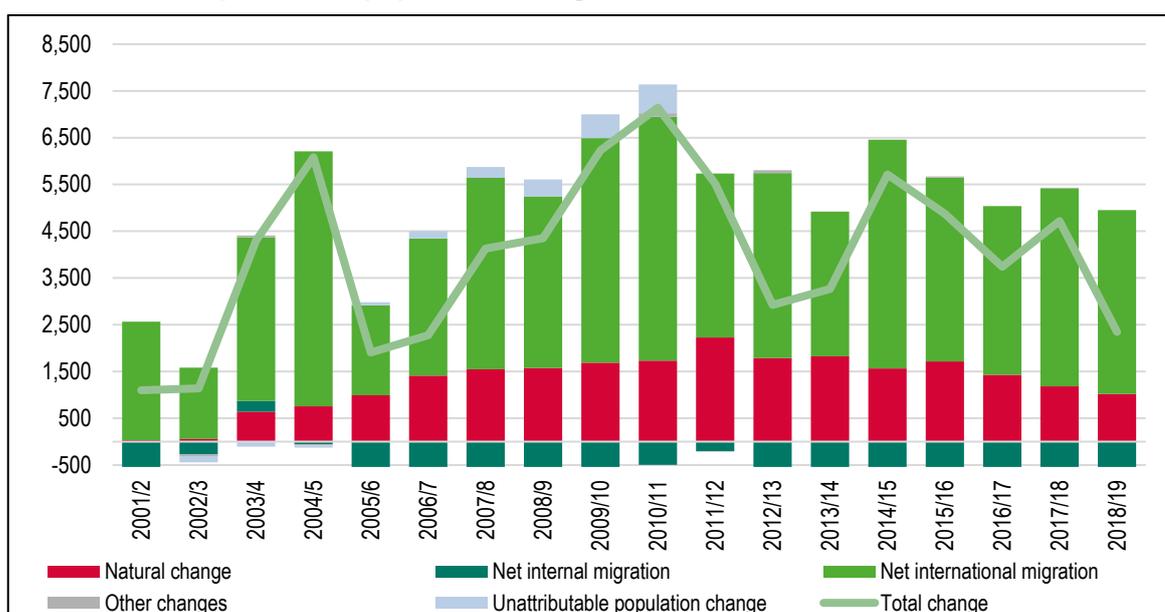
- 3.11 The data shows a positive level of natural change throughout the period (i.e. more births than deaths). Natural change increased notably from 2001/2 to 2011/12 but (pre-covid) has started to fall in the period to 2018/19. Over the last 5-years, natural change has resulted in an annual average increase of around 1,400 people.
- 3.12 Internal migration has been variable – but negative in all years apart from 2003/4; the last five years for which data is available shows an average of over 1,200 people (net) moving from the city to other parts of the UK. International migration is also variable, although the data suggests a positive net level for each year back to 2001. Over the past five years international migration has averaged about 4,100 additional people per annum (net), although this may change as a consequence of Brexit.
- 3.13 The data also shows a positive level of UPC (negative in some earlier years). This suggests that between 2001 and 2011, ONS may have initially underestimated population growth within population estimates (and this was corrected once Census data had been published).

**Table 3.8 Components of population change, mid-2001 to mid-2019 – Sheffield**

	Natural change	Net internal migration	Net international migration	Other changes	Other (unattributable)	Total change
2001/2	31	-1,247	2,534	-35	-184	1,099
2002/3	58	-276	1,523	-32	-135	1,138
2003/4	641	232	3,499	38	-109	4,301
2004/5	758	-58	5,450	-27	-42	6,081
2005/6	992	-1,062	1,926	-13	65	1,908
2006/7	1,411	-2,187	2,937	-37	152	2,276
2007/8	1,550	-1,736	4,090	-8	234	4,130
2008/9	1,576	-1,236	3,668	-20	362	4,350
2009/10	1,689	-738	4,802	-35	510	6,228
2010/11	1,732	-497	5,218	74	616	7,143
2011/12	2,229	-202	3,505	-12	0	5,520
2012/13	1,789	-2,883	3,954	63	0	2,923
2013/14	1,826	-1,658	3,093	3	0	3,264
2014/15	1,566	-706	4,892	-38	0	5,714
2015/16	1,715	-800	3,933	25	0	4,873
2016/17	1,428	-1,271	3,609	-27	0	3,739
2017/18	1,182	-714	4,237	12	0	4,717
2018/19	1,019	-2,571	3,932	-33	0	2,347
Average (01-19)	1,288	-1,089	3,711	-6	82	3,986
Average (11-19)	1,594	-1,351	3,894	-1	0	4,137

Source: ONS

**Table 3.9 Components of population change, mid-2001 to mid-2019 – Sheffield**



Source: ONS

### Other measures of past population growth

- 3.14 The analysis above has focussed on data from the ONS mid-year population estimates (MYE). It is possible to contrast estimates of population growth in this source with other measures – the main one being the Patient Register (PR). The table below shows estimated population growth in both the MYE and the PR – data is shown for Sheffield, the Yorkshire/Humber region and England.
- 3.15 In Sheffield, the MYE shows population change of 6% in the 2011-19 period, whereas the PR is slightly higher (at 7.5%). However, it is notable in all the areas studied that the PR shows higher estimated growth and in fact the difference for Sheffield is less notable than for other locations (for example, for England the MYE shows 6% growth, but the PR is at 9%).
- 3.16 Overall, it is difficult to draw any conclusions from this data, as on the one hand the MYE arguably under-estimates population growth, however the relative difference between MYE and PR estimates also means that the opposite may be true (if for example the MYE at a national level are considered to be accurate).
- 3.17 On balance, it is not considered that the analysis of PR data shows anything sufficiently compelling to suggest setting aside the MYE, either in terms of current population estimates, or trend levels of growth. This analysis can therefore be seen as mainly included for reference purposes.

**Table 3.10 Comparing ONS mid-year population estimates with estimates of population from the Patient Register**

		2011	2019	Change	% change
Sheffield	MYE	551,770	584,830	33,060	6.0%
	Patient Register	563,220	605,510	42,290	7.5%
Yorkshire/ Humber	MYE	5,288,260	5,502,970	214,710	4.1%
	Patient Register	5,462,400	5,798,530	336,130	6.2%
England	MYE	53,107,200	56,286,990	3,179,790	6.0%
	Patient Register	55,312,750	60,288,290	4,975,540	9.0%

Source: ONS

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## 4. DEMOGRAPHIC PROJECTIONS

- 4.1 The latest (2018-based) set of subnational population projections (SNPP) were published by ONS in March 2020 (replacing a 2016-based release). The projections provide estimates of the future population of local authorities, assuming a continuation of recent local trends in fertility, mortality and migration which are constrained to the assumptions made for the 2018-based national population projections.
- 4.2 The 2018-based SNPP contain a number of assumptions that have been changed from the 2016-based version, these assumptions essentially filtering down from changes made at a national level. The key differences are:
- ONS' long-term international migration assumptions have been revised upwards to 190,000 per annum compared to 165,000 in the 2016-based projections. This is based on a 25-year average;
  - The latest projections assume that women will have fewer children, with the average number of children per woman expected to be 1.78 compared to 1.84 in the 2016-based projections; and
  - Life expectancy increases are less than in the 2016-based projections as a consequence of the continued limited growth in life expectancy over the last two years.
- 4.3 As well as providing a principal projection, ONS has developed a number of variants. In all cases the projections use the same fertility and mortality rates with differences being applied in relation to migration. The key variants in terms of this assessment can be described as:
- Principal projection
  - an alternative internal migration variant
  - a 10-year migration variant
- 4.4 In the principal projection, data about internal (domestic) migration uses data for the past 2-years and data about international migration from the past 5-years. The use of 2-years data for internal migration has been driven by ONS changing their methodology for recording internal moves, with this data being available from 2016 only.
- 4.5 The alternative internal migration variant uses data about migration from the last 5-years (2013-18), as well as also using 5-years of data for international migration. This variant is closest to replicating the methodology used in the 2016-based SNPP although it does mean for internal migration that data used is collected on a slightly different basis.
- 4.6 The 10-year migration variant (as the name implies) uses data about trends in migration over the past decade (2008-18). This time period is used for both internal and international migration.

4.7 The table below shows the outputs from each of these three variant scenarios along with comparisons from the 2016- and 2014-based SNPP. This shows that the 2018-based principal projection shows projected population growth of 7.7%, with the alternative internal migration scenario being very slightly higher than this (7.9%) – both of these are higher than the 10-year trend variant. Population growth in the 2016-based projections is virtually identical to the 2018-based (alternative internal migration variant) whilst the 2014-based projection shows the highest population projection of any of the scenarios studied. The comparison with the 2014-based SNPP is particularly important as it underpins the 2014-based SNHP which is used in the Government’s Standard Method).

**Table 4.1 Projected population growth (2021-2038) – Sheffield – range of SNPP releases**

	Population 2021	Population 2038	Change in population	% change
2018 (principal)	592,467	637,956	45,490	7.7%
2018 (alternative internal)	592,704	639,324	46,621	7.9%
2018 (10-year trend)	591,337	632,408	41,071	6.9%
2016-based	590,628	637,090	46,462	7.9%
2014-based	591,355	649,302	57,947	9.8%

Source: ONS

4.8 As noted, the 2018-based SNPP has three main scenarios and rather than provide data from all three, the analysis below looks at a preferred scenario. In this case it is considered that the alternative internal migration variant is likely to be the most robust in a local context. This has been chosen as it is considered that the principal SNPP has too short a data period when looking at internal migration whilst the 10-year alternative is not thought likely to reflect recent changes and may include some influence from the economic downturn/credit crunch of 2008 (given that the 10-year period will be 2008-18).

4.9 The table below shows projected population growth from 2021 to 2038 (using alternative internal migration assumptions) in Sheffield and a range of comparator areas. The data shows that the population of the city is projected to increase at a faster rate than seen in other locations.

**Table 4.2 Projected population growth (2021-2038) – 2018-based SNPP (alternative internal migration assumptions)**

	Population 2021	Population 2038	Change in population	% change
Sheffield	592,704	639,324	46,621	7.9%
Yorkshire/Humber	5,542,873	5,773,304	230,431	4.2%
England	56,989,570	60,766,253	3,776,683	6.6%

Source: ONS

4.10 With the overall change in the population will also come changes to the age profile. The table below summarises findings for key (5 year) age groups. The largest growth will be in people aged 65 and

over. In 2038 it is projected that there will be 120,800 people aged 65 and over. This is an increase of 24,900 from 2021, representing growth of 26%. The population aged 85 and over is projected to increase by an even greater proportion, 41%. Looking at the other end of the age spectrum the data shows that there is projected to be a modest increase in the number of children (those aged under 15), with increases (and some decreases) shown for adult age groups.

**Table 4.3 Population change 2021 to 2038 by five-year age bands – Sheffield (2018-based SNPP – alternative internal migration assumptions)**

	Population 2021	Population 2038	Change in population	% change from 2021
Under 5	32,275	35,101	2,826	8.8%
5-9	33,832	33,706	-126	-0.4%
10-14	34,182	33,101	-1,081	-3.2%
15-19	38,934	41,119	2,185	5.6%
20-24	61,000	67,644	6,644	10.9%
25-29	50,810	52,880	2,070	4.1%
30-34	42,960	44,483	1,523	3.5%
35-39	35,573	38,581	3,008	8.5%
40-44	33,490	39,000	5,510	16.5%
45-49	32,573	39,836	7,263	22.3%
50-54	37,148	33,858	-3,290	-8.9%
55-59	34,349	31,399	-2,950	-8.6%
60-64	29,700	27,828	-1,873	-6.3%
65-69	24,614	30,900	6,286	25.5%
70-74	24,414	29,245	4,831	19.8%
75-79	19,441	24,281	4,840	24.9%
80-84	13,875	17,334	3,458	24.9%
85+	13,534	19,029	5,496	40.6%
<b>Total</b>	<b>592,704</b>	<b>639,324</b>	<b>46,620</b>	<b>7.9%</b>

Source: ONS

- 4.11 The analysis below summarises the above information by assigning population to three broad age groups (which can generally be described as a) children, b) working-age and c) pensionable age). This analysis emphasises the projected increase on the population aged 65 and over, of the total projected population increase of 46,600 people, over half is projected to be in the 65+ age group.

**Table 4.4 Population change 2021 to 2038 by broad age bands – Sheffield (2018-based SNPP – alternative internal migration assumptions)**

	Population 2021	Population 2038	Change in population	% change from 2021
Under 16	106,921	108,456	1,535	1.4%
16-64	389,905	410,079	20,174	5.2%
65 and over	95,878	120,789	24,911	26.0%
<b>Total</b>	<b>592,704</b>	<b>639,324</b>	<b>46,620</b>	<b>7.9%</b>

Source: ONS

- 4.12 As noted previously, the Government decided to amend the Standard Method so that the most recent (2018-based at the time of writing) SNHP are disregarded in favour of using the 2014-based version as a start point. There is some good logic for this as the 2018-based projections do seem to potentially be building in additional suppression of household formation (discussed below), however, it is considered that the 2018-based SNPP (i.e. the population data) should not be so readily disregarded – this is particularly because of the changes made to fertility and mortality rates which reflect recently observed trends.
- 4.13 Therefore, in moving the analysis forward, it is suggested that the most suitable approach is to maintain the 2018-based SNPP as a baseline projection (the alternative internal migration assumptions) and amend migration estimates so that the level of need matches that previously suggested (for 2,923 dwellings per annum across the city). Further adjustments are made to household formation to ensure a consistent projection with the housing need.

#### **Household Representative Rates (Household Formation)**

- 4.14 Having studied the population size and age structure changes, the next step in the process is to convert this information into estimates of the number of households in the area. To do this the concept of household representative rates (HRR) is used. HRRs can be described in their most simple terms as the number of people who are counted as heads of households (or in this case the more widely used Household Reference Person (HRP)).
- 4.15 The latest HRRs are as contained in the ONS 2018-based subnational household projections (SNHP). It would be fair to say that recent SNHP (since the 2016-based release) have come under some criticism, this is largely because they are based only on data in the 2001-11 Census period which would suggest that it builds in the suppression of household formation experienced in that time.
- 4.16 This suppression can be seen in the figure below, and particularly for the 25-34 age group where there was a drop in formation rates from 2001 to 2011 (albeit not as big a decline as seen in many locations). ONS are projecting for the rate to drop further to 2021 (following which the rate is held

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broadly stable). Given this apparent suppression, the SNHP data has been used to create a scenario where the reduction in the HRR for the 25-34 age group is reversed so that between 2021 and 2031 it returns to the level seen in 2001 (a time when this age group was arguably less constrained), a similar adjustment has also been made to the 16-24 age group (although the impact of this is fairly minor).

4.17 Therefore, rather than rejecting the 2018-based SNHP due to the potential for the projections to include a degree of suppression, the data has been used to build a scenario where the suppression is reversed. Two scenarios are modelled:

- Using 2018-based SNHP where data from the SNHP is used as published (2018-SNHP); and
- Using the 2018-based SNHP with an adjustment to the 16-34 age groups to 'correct' for apparent suppression in household formation (2001-return).

4.18 An approach that improves/increases the household formation of younger people is consistent with advice set out in Planning Practice Guidance (see paragraph 2a-006), although in reality there would need to be changes in the housing market to allow this to happen (rather than simply building more homes). For example, to allow more younger households to form, it is likely that there would need to be provision of more affordable housing, or indeed market housing that is more affordable. Therefore, whilst this assumption has been used in modelling, the likelihood of this being an outcome will depend on a range of changes happening to enable younger people to form households at the sort of rates seen historically.

**Table 4.5 Projected Household Representative Rates by age of head of household – Sheffield (2018-based SNHP)**



Source: Derived from ONS and CLG data

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## Household Growth

- 4.19 The table below shows estimates of household growth with the HRRs in the 2018-based SNHP and an estimate of the number of additional dwellings this might equate to. The figures link to population growth in the 2018-based SNPP (alternative internal migration variant).
- 4.20 To convert households into dwellings the analysis includes an uplift to take account of vacant homes. For the purposes of analysis, it has been assumed that the number of vacant homes in new stock would be 3% higher than the number of occupied homes (which is taken as a proxy for households) and hence household growth figures are uplifted by 3% to provide an estimate of housing need. This figure is a fairly standard assumption when looking at vacancy rates in new stock and will allow for movement within the housing stock.
- 4.21 For reference, Council Tax data for 2020 point to around 6,400 vacant homes from a dwelling stock of around 252,000; giving a vacancy rate of 2.5% - it is however likely there are more vacant homes which are not registered as such on the Council Tax Register. Census data for 2011 points to a vacancy rate of 3.1% and therefore the 3.0% figure used looks to be of the right order.
- 4.22 The analysis below shows the housing need outputs when linked to the 2018-based SNPP. This shows an overall housing need for 1,523 dwellings per annum (dpa) across the city when using the 2018-based SNHP as the underlying household projection. This figure increases to 1,731 dpa with an adjustment to the household formation rates of the population aged under 35.

**Table 4.6 Projected housing need – range of household representative rate assumptions – Sheffield (linked to 2018-based SNPP)**

	Households 2021	Households 2038	Change in households	Per annum	Dwellings (per annum)
2018-SNHP	246,116	271,256	25,139	1,479	1,523
2001-return	246,116	274,683	28,566	1,680	1,731

Source: Demographic projections

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## 5. DEVELOPING BESPOKE POPULATION PROJECTIONS

- 5.1 In section 2 of this report it has been noted that based on the Government's Standard Method, there is a requirement to provide 49,691 homes in the 2021-38 period at an average rate of 2,923 dwellings per annum. It can be seen from the analysis above, that even by taking a fairly positive approach to HRRs there would not be the level of household growth required to fill this number of homes.
- 5.2 Therefore, a scenario has been developed which increases migration to the city (as well as building in the improvement to household formation discussed above) such that there is sufficient population growth for 2,923 additional homes each year.
- 5.3 In summary, an approach has therefore been developed that both improves household formation and increases migration to project how population and household structures might change to support delivery of 49,691 homes (2021-38). This approach is consistent with that set out in the PPG (2a-006).
- 5.4 Within the modelling, migration assumptions have been changed so that across the city the increase in households matches the housing need (including the 3% vacancy allowance). The changes to migration have been applied on a proportionate basis; the methodology assumes that the age/sex profile of both in- and out-migrants is the same as underpins the 2018-based SNPP (alternative internal migration variant) with adjustments being consistently applied to both internal (domestic) and international migration. Adjustments are made to both in- and out-migration (e.g. if in-migration is increased by 1% then out-migration is reduced by 1%). In summary the method includes the following assumptions:
- Base population in 2019 from the latest mid-year population estimates;
  - Population in 2020 estimated on basis of housing completions (i.e. what population change is likely given the number of additional homes to fill). Delivery of 3,083 has been assumed for 2019/20;
  - Population rolled forward to 2021 on the basis of the 2018-based SNPP (alternative internal migration variant);
  - Household representative rates from the 2018-based SNHP with an adjustment for suppression in the 16-34 age group; and
  - The migration profile (by age and sex) in the same proportions as the 2018-based SNPP (alternative internal migration variant)
- 5.5 In developing this projection, a notably higher level of population growth is derived (96,800 additional people compared with 46,600 in the SNPP as published). The age structure of the two projections is also somewhat different, with the projection linked to 2,923 dpa showing much stronger growth in what might be considered as 'working-age' groups. This arises due to the fact that ONS data shows that migrants are heavily concentrated in those age groups (along with their associated children).

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- 5.6 The different level of population growth in the 2018-based SNPP and when linking to 2,923 dpa is created by assuming there would be an increase (from a trend-based position) in the number of net in-migrants to the city. Were this migration to not materialise, then arguably this would mean some additional homes being vacant (alternatively there could be household formation rates well in excess of those seen historically).
- 5.7 The 2018-based SNHP project for average household size to fall from 2.35 in 2021 to 2.27 in 2038; if 2,923 homes per annum were built (and 97% occupied), but population growth were to be as set out in the 2018-based SNPP, then average household size would need to drop to 2.14. This seems unlikely and would likely lead to a situation where a great many additional households are single people.
- 5.8 The analysis of past trends in migration suggests that the city could potentially support higher levels of net migration than seen in the recent past, although the modelled level of net migration (of about 3,500 people per annum on average in the 2021-38 period) is somewhat higher than all but a handful of years back to 2011. Were the migration to not materialise, it is more likely that the development industry would stop or slow down the rate of building, rather than building homes to remain empty. Regardless, planning on the basis of an increase in net migration is something that should be monitored, particularly along with neighbouring authorities, who may in some cases also be developing housing targets that would assume an increase in migration levels.

Table 5.1 Population change 2021 to 2038 by five-year age bands – Sheffield (linked to delivery of 2,923 dwellings per annum)

	Population 2021	Population 2038	Change in population	% change from 2021
Under 5	32,268	40,336	8,068	25.0%
5-9	33,885	37,621	3,737	11.0%
10-14	34,149	35,610	1,461	4.3%
15-19	39,178	42,584	3,406	8.7%
20-24	61,828	72,728	10,900	17.6%
25-29	51,981	60,471	8,490	16.3%
30-34	43,724	52,735	9,010	20.6%
35-39	35,758	44,542	8,784	24.6%
40-44	33,586	44,054	10,468	31.2%
45-49	32,684	43,160	10,476	32.1%
50-54	37,246	35,559	-1,686	-4.5%
55-59	34,483	32,439	-2,043	-5.9%
60-64	29,721	28,571	-1,150	-3.9%
65-69	24,691	31,570	6,879	27.9%
70-74	24,381	29,795	5,413	22.2%
75-79	19,445	24,689	5,244	27.0%
80-84	13,839	17,581	3,742	27.0%
85+	13,606	19,247	5,640	41.5%
<b>Total</b>	<b>596,454</b>	<b>693,291</b>	<b>96,838</b>	<b>16.2%</b>

Source: Demographic projections

- 5.9 The table below summarises this information into three broad age bands. This confirms that increases in the older person population are projected to be the most significant, but does also show that the increase in the population aged 16-64 is notably higher than is projected by the official projections. The 2018-based SNPP suggest an increase of 20,200 people aged 16-64 (2021-38), whereas the projection linking to 2,923 dpa increases this notably – to a figure of around 56,400 people).

Table 5.2 Population change 2021 to 2038 by broad age bands – Sheffield (linked to delivery of 2,923 dwellings per annum)

	Population 2021	Population 2038	Change in population	% change from 2021
Under 16	106,968	120,463	13,495	12.6%
16-64	393,523	449,947	56,424	14.3%
65 and over	95,962	122,881	26,919	28.1%
<b>Total</b>	<b>596,454</b>	<b>693,291</b>	<b>96,838</b>	<b>16.2%</b>

Source: Demographic Projections

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## Issues and Options

- 5.10 As a further sensitivity we have also developed a projection linking to the housing requirement set out in the Sheffield Plan Issues and Options document (September 2020). This set out a housing requirement of 2,131 dwellings per annum based on the previous version of the standard method without application of the urban centres uplift.
- 5.11 Our approach to calculating the population associated with this level of housing growth is the same as that set out above for the standard method. The following tables shows the population growth by broad age band and by five-year age bands.
- 5.12 As shown the overall population growth associated with delivering 2,131 homes per annum is 63,126 people. Around 50% of this growth is within the working age population with the largest percentage growth (26.7%) in those aged over 75.

**Table 5.3 Population change 2021 to 2038 by broad age bands – Sheffield (linked to delivery of 2,131 dwellings per annum)**

	Population 2021	Population 2038	Change in population	% change from 2021
Under 16	106,968	113,224	6,256	5.8%
16-64	393,523	424,751	31,228	7.9%
65 and over	95,962	121,604	25,642	26.7%
<b>Total</b>	<b>596,454</b>	<b>659,579</b>	<b>63,126</b>	<b>10.6%</b>

Source: Demographic Projections

- 5.13 Within that growth there is a significant growth (40.4%) in the very elderly population (Over 85). There is expected to be a decline in those aged 50-64 this is linked to the aging of the current population.

Table 5.4 Population change 2021 to 2038 by five-year age bands – Sheffield (linked to delivery of 2,131 dwellings per annum)

	Population 2021	Population 2038	Change in population	% change from 2021
Under 5	32,268	36,873	4,605	14.3%
5-9	33,885	35,282	1,397	4.1%
10-14	34,149	34,332	183	0.5%
15-19	39,178	41,657	2,478	6.3%
20-24	61,828	69,281	7,454	12.1%
25-29	51,981	55,193	3,213	6.2%
30-34	43,724	47,067	3,343	7.6%
35-39	35,758	40,303	4,545	12.7%
40-44	33,586	41,758	8,172	24.3%
45-49	32,684	41,652	8,968	27.4%
50-54	37,246	34,651	-2,595	-7.0%
55-59	34,483	31,808	-2,674	-7.8%
60-64	29,721	28,117	-1,605	-5.4%
65-69	24,691	31,144	6,453	26.1%
70-74	24,381	29,456	5,074	20.8%
75-79	19,445	24,461	5,016	25.8%
80-84	13,839	17,447	3,608	26.1%
85+	13,606	19,097	5,491	40.4%
<b>Total</b>	<b>596,454</b>	<b>659,579</b>	<b>63,126</b>	<b>10.6%</b>

Source: Demographic projections

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## 6. THE LINK BETWEEN HOUSING AND ECONOMIC GROWTH

6.1 Before the Standard Method, and under the previous PPG, it was conventional for assessments such as this to consider the link between housing and economic growth. This generally took the form of establishing likely future job growth and then testing what level of population growth (and hence household growth/housing need) would be required for the two to be aligned. Whilst this step is not necessary for the purposes of Standard Method, it is of interest to estimate what level of job growth the projections might support.

6.2 To look at estimates of the job growth to be supported, a series of stages are undertaken. These can be summarised as:

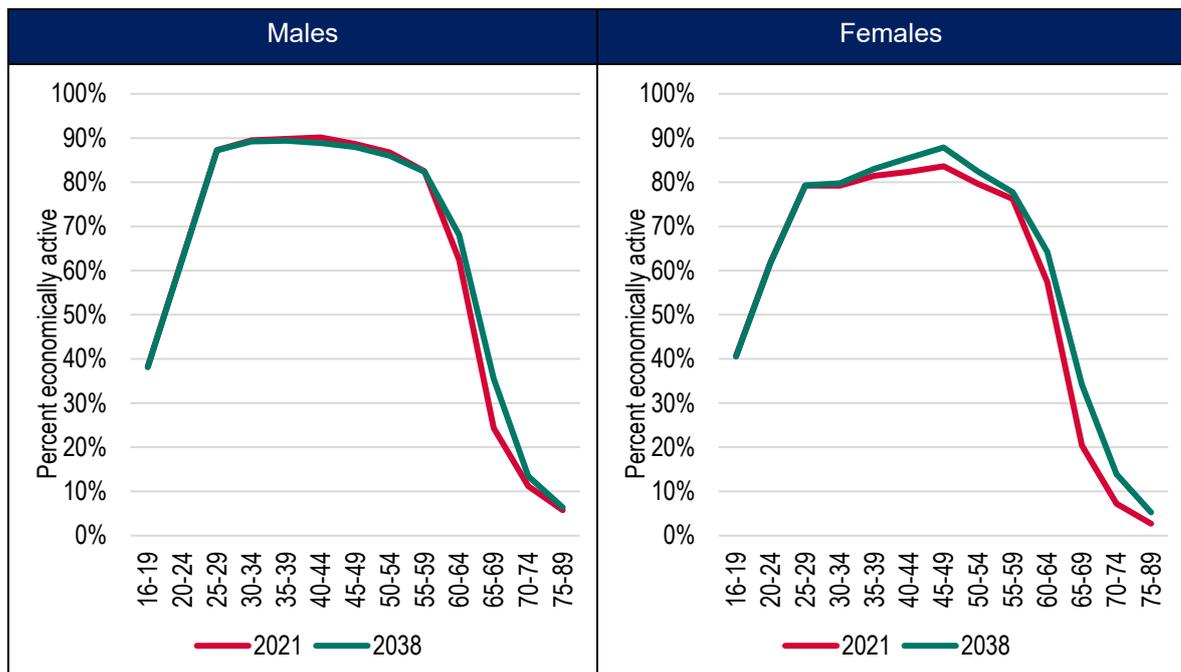
- Estimate changes to the economically active population (this provides an estimate of the change in labour-supply)
- Overlay information about commuting patterns, double jobbing (i.e. the fact that some people have more than one job) and potential changes to unemployment.
- Bringing together this information will provide an estimate of the potential job growth supported by the population projections

### **Growth in Economically Active Population**

6.3 The approach taken in this report is to derive a series of age and sex specific economic activity rates and use these to estimate how many people in the population will be economically active as projections develop. This is a fairly typical approach with data being drawn in this instance from the Office for Budget Responsibility (OBR) – July 2018 (Fiscal Sustainability Report).

6.4 The figure and table below show the assumptions made (for Sheffield). The analysis shows that the main changes to economic activity rates are projected to be in the 60-69 age groups – this will to a considerable degree link to changes to pensionable age, as well as general trends in the number of older people working for longer (which in itself is linked to general reductions in pension provision).

**Table 6.1 Projected changes to economic activity rates (2021 and 2038) – Sheffield**



Source: Based on OBR and Census (2011) data

**Table 6.2 Projected changes to economic activity rates (2021 and 2038) – Sheffield**

	Males			Females		
	2021	2038	Change	2021	2038	Change
16-19	38.2%	38.1%	-0.1%	40.6%	40.5%	-0.1%
20-24	62.8%	62.6%	-0.2%	62.0%	61.8%	-0.1%
25-29	87.3%	87.3%	0.0%	79.3%	79.3%	0.0%
30-34	89.5%	89.2%	-0.2%	79.2%	79.7%	0.5%
35-39	89.8%	89.4%	-0.4%	81.5%	83.0%	1.6%
40-44	90.1%	88.9%	-1.3%	82.4%	85.5%	3.1%
45-49	88.7%	88.0%	-0.7%	83.6%	87.9%	4.2%
50-54	86.7%	86.0%	-0.8%	79.6%	82.4%	2.8%
55-59	82.5%	82.4%	-0.1%	76.2%	77.7%	1.5%
60-64	62.4%	68.1%	5.6%	57.4%	64.2%	6.9%
65-69	24.3%	35.5%	11.2%	20.4%	34.2%	13.8%
70-74	11.2%	13.4%	2.2%	7.2%	13.9%	6.7%
75-89	5.8%	6.4%	0.6%	2.7%	5.3%	2.6%

Source: Based on OBR and Census (2011) data

6.5 Working through an analysis of age and sex specific economic activity rates it is possible to estimate the overall change in the number of economically active people in the city – this is set out in the table below. The analysis shows under the Standard Method that there would be an estimated increase in the economically active population of around 57,200 people (a 19% increase over 17-years).

**Table 6.3 Estimated change to the economically active population (2021-38) – Sheffield**

	Economically active (2021)	Economically active (2038)	Total change in economically active
2018-based SNPP	302,113	329,585	27,471
Standard Method	304,891	362,054	57,164
Issues/Options	304,891	341,660	36,769

Source: Derived from demographic projections

### **Linking Changes to Resident Labour Supply and Job Growth**

6.6 The analysis above has set out potential scenarios for the change in the number of people who are economically active. However, it is arguably more useful to convert this information into an estimate of the number of jobs this would support. The number of jobs and resident workers required to support these jobs will differ depending on three main factors:

- Commuting patterns – where an area sees more people out-commute for work than in-commute it may be the case that a higher level of increase in the economically active population would be required to provide a sufficient workforce for a given number of jobs (and vice versa where there is net in-commuting);
- Double jobbing – some people hold down more than one job and therefore the number of workers required will be slightly lower than the number of jobs; and
- Unemployment – if unemployment were to fall then the growth in the economically active population would not need to be as large as the growth in jobs (and vice versa).

### **Commuting Patterns**

6.7 The table below shows summary data about commuting to and from Sheffield from the 2011 Census. Overall, the data shows that the city sees a level of in-commuting for work with the number of people resident in the area who are working being about 7% lower than the total number who work in the area. This number is shown as the commuting ratio in the final row of the table and is calculated as the number of people living in an area (and working) divided by the number of people working in the area (regardless of where they live).

**Table 6.4 Commuting patterns in Sheffield**

	Number of people
Live and work in Local Authority (LA)	161,004
Home workers	18,778
No fixed workplace	18,872
In-commute	63,776
Out-commute	46,601
Total working in LA	262,430
Total living in LA (and working)	245,255
Commuting ratio	0.935

Source: 2011 Census

- 6.8 The analysis on commuting is based on a commuting ratio derived from the 2011 Census – this ratio has been taken forward for further analysis and has been used as it represents the most robust published estimate of commuting dynamics in the study area.
- 6.9 However, there is merit in considering if rates are likely to have changed and the potential implication of this. Analysis below seeks to replicate the Census in estimating the number of people who work in the area and the number of residents who are in employment (regardless of where they work) – the analysis takes a 2019 base. The key data for this analysis is:
- Estimated jobs (for 2019, taken from ONS jobs density data)
  - Estimates of double jobbing (which when applied to jobs gives an estimate of the number of people working in an area)
  - Resident economically active population (from the Annual Population Survey)
  - Number of people unemployed (which when deducted from the economically active population will give the number of people living in the area and in work)
- 6.10 The table below sets out this analysis and the resulting commuting ratio (which is also compared with that derived from the 2011 Census). This shows on the basis of this evidence that there may have been a small change in the commuting ratio, with a lower level of net in commuting to the area for work – indeed the number of people working in the area and the number of people living in the area and in work looks to be fairly balanced (shown by the commuting ratio of almost exactly 1).
- 6.11 Data in the REM also suggests a reduction in net in-commuting over this period, from 16,300 people in 2011, down to 11,800 in 2019. Whilst these findings should be treated with some caution given the error margins associated with some of the data, it does provide a good set of parameters for modelling the future relationship between jobs and the resident economically active population.

**Table 6.5 Estimated commuting patterns in Sheffield (2019)**

	Sheffield
Number of jobs	300,000
Double jobbing	3.8%
Total working in area	288,637
Economically active residents	301,800
Unemployment	12,500
Total living in area (and working)	289,300
Commuting ratio	1.002
Commuting ratio (Census)	0.935

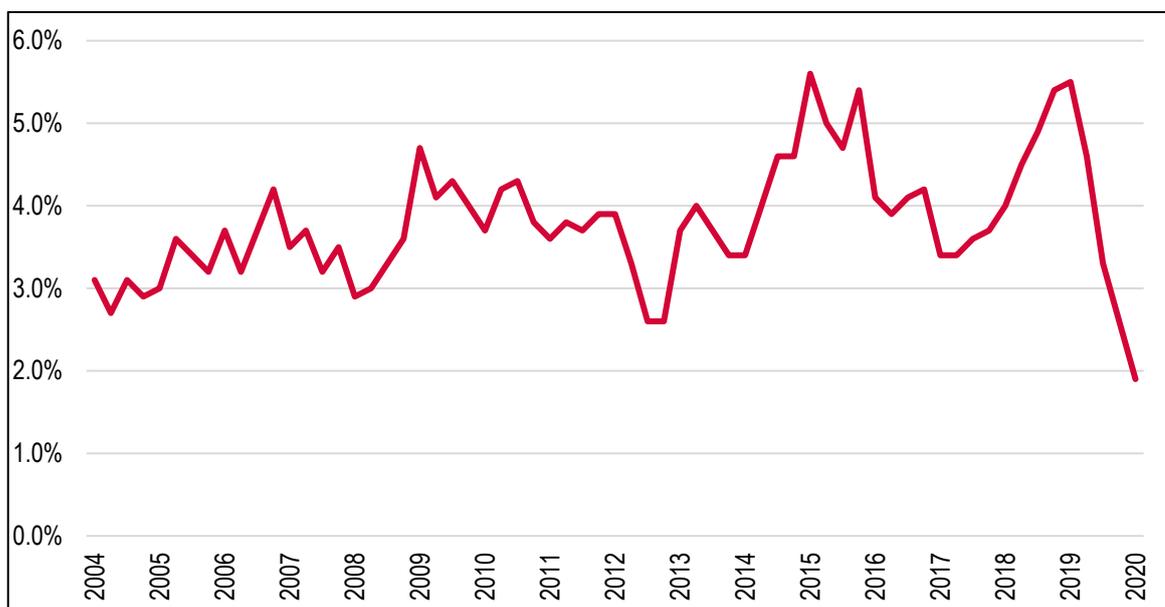
Source: Derived from a range of sources

- 6.12 In translating the commuting pattern data into growth in the labour-force, a core assumption is that the commuting ratio remains at the same level as shown by the 2011 Census. A sensitivity has also been developed where commuting for new jobs is assumed to be on a 1:1 ratio (i.e. the increase in the number of people working in the city is equal to the number of people living in the city who are working).
- 6.13 This sensitivity is useful to understand the implications for housing as to continue to assume net in-commuting would arguably mean that other authorities (outside of Sheffield) would be making housing provision for people to move to the city.
- 6.14 The 1:1 ratio is also useful in the context of Covid-19 with the likelihood being that a greater proportion of people will work from home (or mainly from home) in the future. The 1:1 ratio also reflects a possible change in commuting dynamics since 2011 (although the analysis is not definitive).

### **Double Jobbing**

- 6.15 The analysis also considers that a number of people may have more than one job (double jobbing). This can be calculated as the number of people working in the local authority divided by the number of jobs. Data from the Annual Population Survey (available on the NOMIS website) suggests across the city that typically about 3.8% of workers have a second job – levels of double jobbing have been variable over time (mainly due to the accuracy of data at a local level).

**Table 6.6 Percentage of all people in employment who have a second job (2004-2020) – Sheffield**



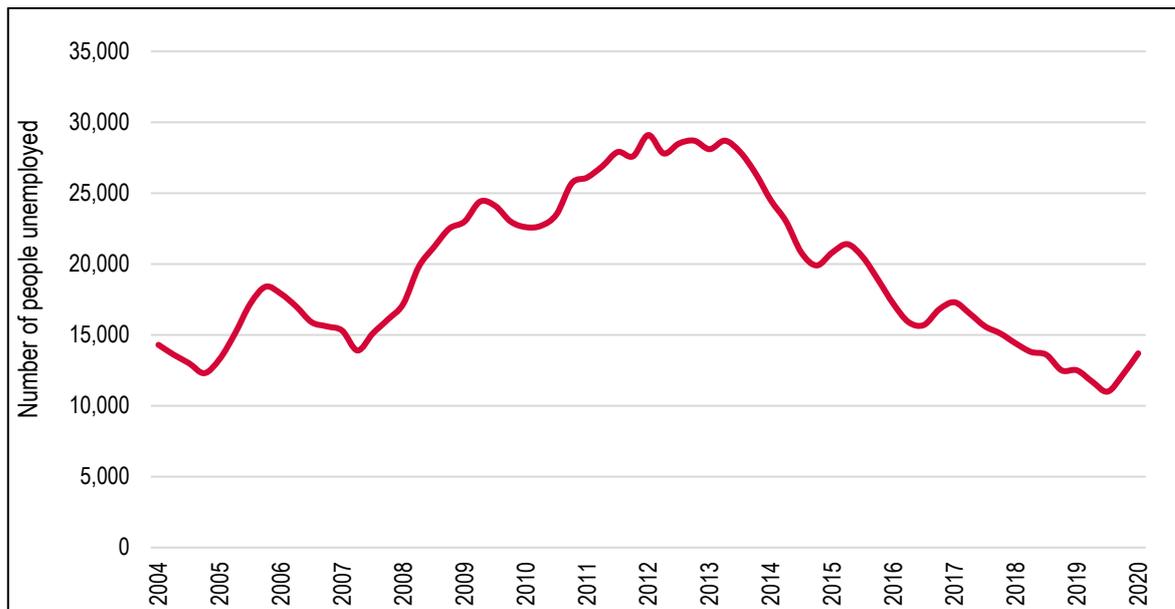
Source: Annual Population Survey (from NOMIS)

- 6.16 For the purposes of this assessment it has been assumed that around 3.8% of people will have more than one job moving forward. A double jobbing figure of 3.8% gives rise to a ratio of 0.962 (i.e. the number of jobs supported by the workforce will be around 3.8% higher than workforce growth). It has been assumed in the analysis that the level of double jobbing will remain constant over time.

### **Unemployment**

- 6.17 The last analysis when looking at the link between jobs and resident labour supply is a consideration of unemployment. Essentially, this is considering if there is any latent labour force that could move back into employment to take up new jobs. This is particularly important given the assessment takes a 2021 base, a time where there is likely to have been notable increases in unemployment due to Covid-19, although it will be difficult to be precise about numbers, particularly as the impact of the ending of the furlough scheme are unknown.
- 6.18 The figure below shows the number of people who are unemployed and how this has changed back to 2004. The analysis shows a clear increase in unemployment until about 2012-13 and that since then, the number of people unemployed has dropped notably – by 2019/20, the number of unemployed people was back close to the level observed in 2004. The data is noteworthy as it does not yet show any notable change or increase as a result of COVID-19. However, the final period for which data is available is for a 12-month period to December 2020 and may well have not picked up impacts yet.

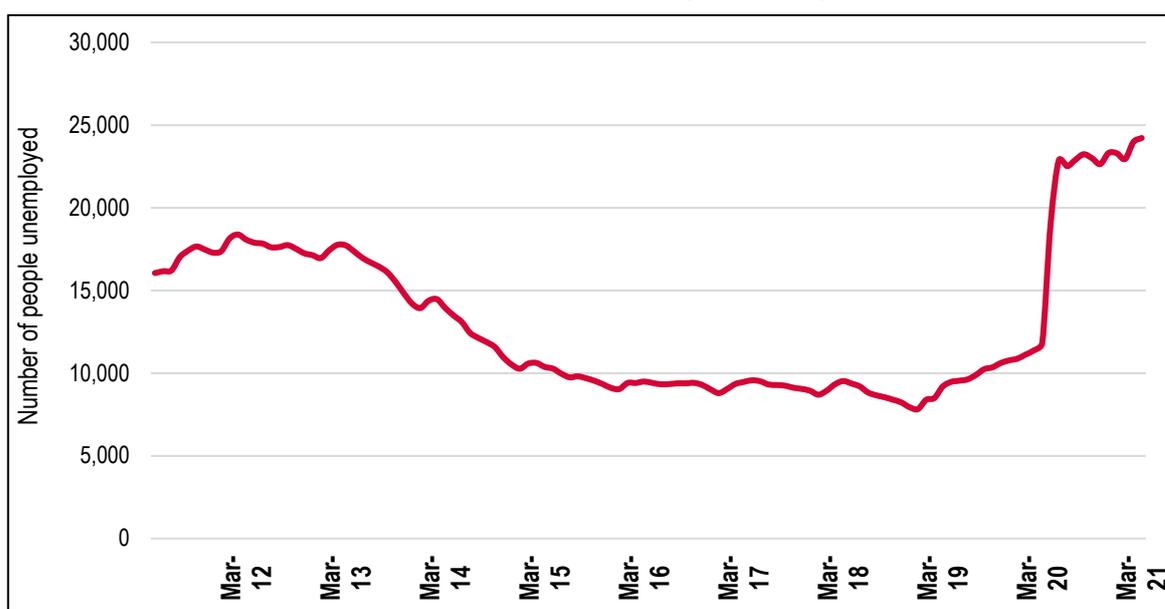
**Table 6.7** Number of people unemployed (2004-2020) – Sheffield



Source: Annual Population Survey (modelled unemployment data)

- 6.19 On the basis of the above data, it seems sensible to consider other data about unemployment changes, with the analysis below looking at Claimant Count data (described as the number of people claiming Jobseeker’s Allowance plus those who claim Universal Credit who are out of work). This will not give a full picture of unemployment as not all those unemployed will be a claimant, but it will certainly help to provide an indication; claimant count data is available up to March 2021 with the data below showing a trend for the previous decade.
- 6.20 The analysis shows a clear increase in the number of claimants (presumably as a result of the pandemic) – rising from around 8,000-9,000 to around 23,000 over the most recent months for which data is available. For the purposes of modelling, and because the economic forecasts used later in the document are pre-pandemic, no adjustments are made for the increased unemployment. Essentially, the modelling assumes that job losses as a result of the pandemic will be recovered by the end of the projection period in 2038.

**Table 6.8 Number of out-of-work benefit claimants (2011-2021) – Sheffield**



Source: NOMIS

### Jobs Supported by Growth in the Resident Labour Force

6.21 The table below shows how many additional jobs might be supported by population growth under the Standard Method (2,923 dwellings per annum on average from the 2021-38 period). Given current commuting patterns and estimates about double jobbing, it is estimated that just under 63,600 additional jobs could be supported by the changes to the resident labour supply, with a slightly lower figure of 59,400 if commuting is assumed to be on a 1:1 ratio for new jobs. These figures exclude any additional jobs resulting from people returning to work following the pandemic.

**Table 6.9 Jobs supported by demographic projections (2021-38) – Sheffield**

		Total change in economically active	Allowance for net commuting	Allowance for double jobbing (= jobs supported)
2018-based SNPP	Census commuting	27,471	29,395	30,552
	1:1 commuting	27,471	27,471	28,553
Standard Method	Census commuting	57,164	61,167	63,575
	1:1 commuting	57,164	57,164	59,414
Issues/Options	Census commuting	36,769	39,344	40,893
	1:1 commuting	36,769	36,769	38,217

Source: Derived from a range of sources as described

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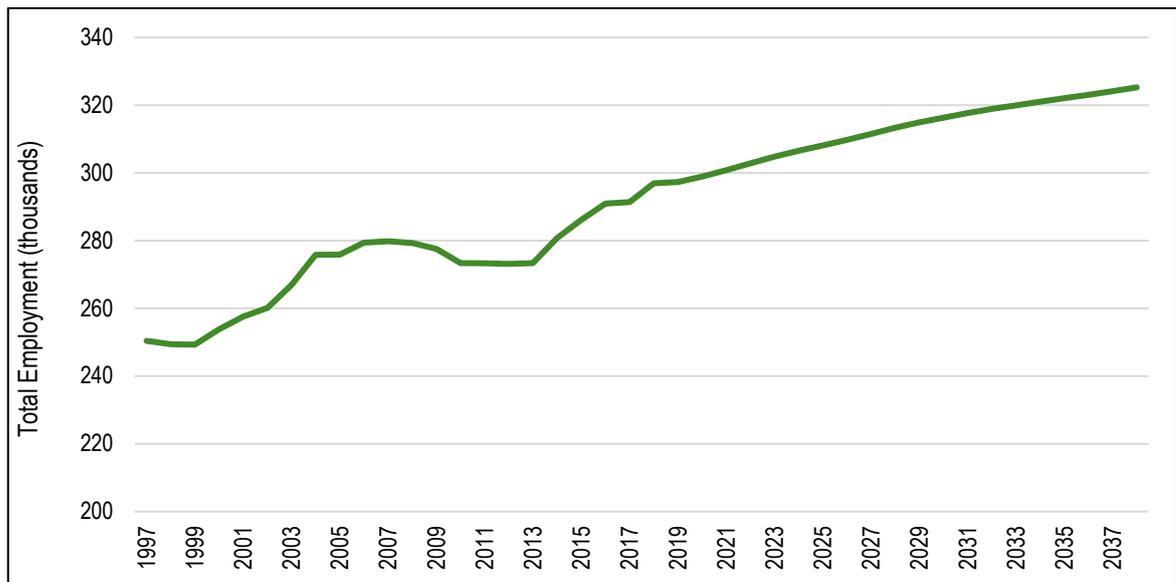
## 7. ECONOMIC LED HOUSING NEED

- 7.1 As well as looking at the growth in the economically active population linked to a range of demographic projections, it is of use to consider what level of housing might be required for economic forecasts to be met.
- 7.2 For this project access has been provided to the Regional Econometric Model (REM) produced by Experian. We have also drawn on analysis from Sheffield's Employment Land Review<sup>4</sup> (September 2020) as well as the 2015 Strategic Economic Plan. Unlike the Employment Land Review, which focuses on Full Time Equivalent jobs, this report examines total jobs and also to align with the standard method we have only examined growth from 2021 onwards.
- 7.3 The REM only projects employment growth to 2036. In order to align with the plan period (2021-2038) we have applied the Compound Annual Growth Rate (CAGR) for the 2031 to 2036 period to the 2036 to 2038 in order to extrapolate the forecasts.
- 7.4 As shown in the table below there is a fairly consistent level of future growth. The total projected employment growth for the period 2021 to 2038 is around 24,400 jobs or 1,437 per annum. This equated to a CAGR of 0.46%.

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<sup>4</sup><https://www.sheffield.gov.uk/content/dam/sheffield/docs/planning-and-development/sheffield-plan/Sheffield%20Employment%20Land%20Review%202020.pdf>

**Table 7.1 Total Industry Employment (1997 – 2038)**



Source: Experian REM (2019)

- 7.5 The table also makes it clear that future growth is slower than historic growth with particularly high levels of employment growth from 1999 and 2013. As a sensitivity to the forecasts, we calculated the CAGR for the 1997 to 2018 period as 0.81% and applied this going forward. This period aligns with the Employment Land Review.
- 7.6 The baseline forecasts are based on Experian’s view of future Macro-Economic growth which is distributed to a local level based on past trends. For the REM a further level of input to reflect known investment is also factored in.
- 7.7 As a final sensitivity we have also looked at the Local Enterprise Partnerships (LEP) ambition for the City Region as set out in the former Strategic Economic Plan (SEP) from 2015. The LEP’s ambitions included boosting the private sector to help create 70,000 new jobs. This target has been achieved but remains the most useful high jobs growth figure for this work. It should be noted that there is a more recent Strategic Economic Plan (2021). The new SEP does not consider overall jobs growth but focusses on attracting and creating 33,000 higher quality jobs for South Yorkshire.
- 7.8 This work is reflected in the Employment Land Review and is translated into a job’s growth of 1% per annum or 2,550 jobs per annum. We have used this latter figure to develop a third “policy-on” scenario. As this 2,550 jobs per annum scenario is applied to a different starting point (2021) it does not equate to 1.0% per annum it is equated to in the ELR but 0.8% per annum. As this scenario is close to that based on past trends (0.81% pa), we have merged the two scenarios.

7.9 The final scenario takes a midpoint between the policy-on/past trend scenario and the REM forecasts. The table below draws together the level of jobs growth from each of these scenarios which are taken forward to calculate the economic led housing need.

**Table 7.2 Forecast number of jobs in 2021 and 2038 – Sheffield (range of forecasts)**

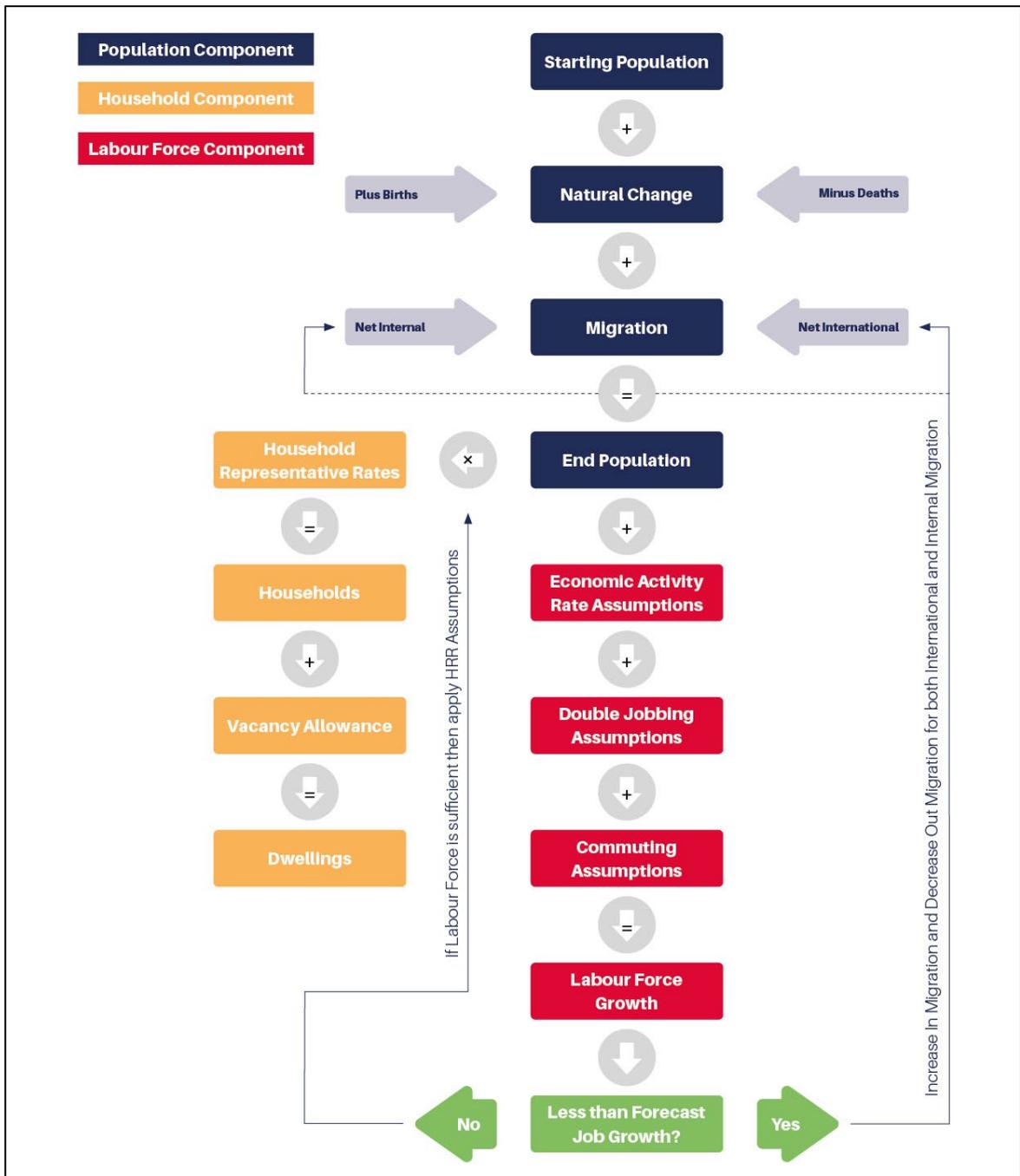
	Jobs (2021)	Jobs (2038)	Total Change in jobs	Change in jobs Per Annum
REM Employment	300,818	325,242	24,424	1,437
Policy on/Past Trend	300,818	344,168	43,350	2,550
Midpoint	300,818	334,705	33,887	1,993

Source: Derived a range of sources

7.10 The table below illustrates how the economic led housing need model works. Within the modelling, migration assumptions have been changed so that across the city the increase in the economically active population matches the increase in the resident workforce required. The method is similar to that developing a projection linked to the Standard Method, with changes to migration being applied on a proportionate basis.

7.11 Once the level of economically active population matches the job growth forecast, the population (and its age structure) is modelled against the HRRs in the SNHP to see what level of housing provision that might imply.

Table 7.3 Economic Led Housing Need Model



Source: Icen Projects

- 7.12 For the different sensitivities below, the assumptions around Economic Activity Levels and Commuting Patterns are unchanged from previous assumptions set out in Chapter 6 but migration is increased to ensure the requisite labour force remains the same.
- 7.13 The first part of the analysis is to estimate what level of growth in the labour supply would be needed for the job growth forecast to be met. This is essentially the same as the analysis above, but working in reverse order.

7.14 This calculation is shown below and for example shows that to meet 24,424 jobs there would need to be an increase in the economically active population of between 21,161 and 23,499 depending on the commuting assumptions – these figures are fed through into the modelling which is again set against the economic activity rates discussed previously.

**Table 7.4 Forecast job growth and change in resident workforce with double jobbing and commuting allowance (2021-38) – range of forecasts**

	Baseline		Policy-on/ Past Trends		Midpoint	
	Census commuting	1:1 commuting	Census commuting	1:1 commuting	Census commuting	1:1 commuting
Number of additional jobs (2021-38)	24,424	24,424	43,350	43,350	33,887	33,887
Double jobbing allowance	0.962	0.962	0.962	0.962	0.962	0.962
Number of workers required	23,499	23,499	41,708	41,708	32,603	32,603
Commuting ratio	0.935	1.0	0.935	1.0	0.935	1.0
Total change in economically active	21,961	23,499	38,978	41,708	30,470	32,603

Source: Derived from a range of sources as described

7.15 The table below shows estimates of housing need set against the job growth scenarios. The analysis shows that to support the baseline economic forecast there would need to be provision of around 1,556 to 1,616 homes each year in Sheffield. For the Policy-on/ Past Trend Scenario this range increases from 2,217 to 2,323 dwellings per annum.

**Table 7.5 Projected housing need – job-led scenarios – Sheffield**

		Households 2021	Households 2038	Change in households	Per annum	Dwellings (per annum)
Baseline	Census commuting	247,656	273,337	25,681	1,511	1,556
	1:1 commuting	247,656	274,323	26,667	1,569	1,616
Policy-on/ Past Trends	Census commuting	247,656	284,244	36,588	2,152	2,217
	1:1 commuting	247,656	285,994	38,337	2,255	2,323
Midpoint	Census commuting	247,656	278,791	31,135	1,831	1,886
	1:1 commuting	247,656	280,158	32,502	1,912	1,969

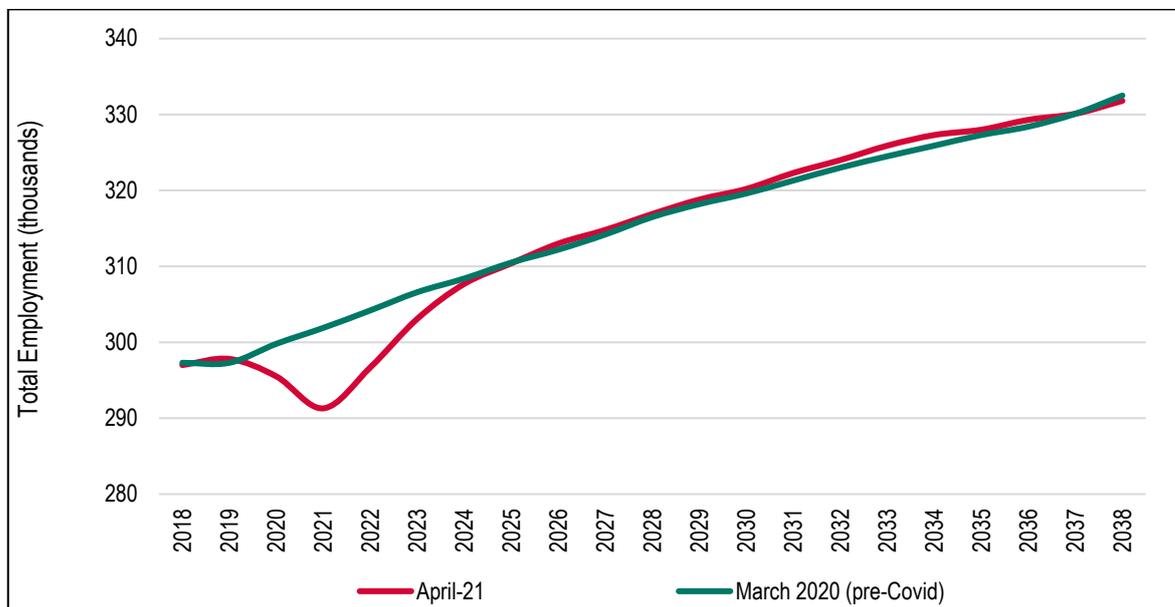
Source: Demographic projections

7.16 These figures are all significantly below the 2,923 dwellings per annum from the Standard Method and suggests that delivering to this level would provide a sufficient labour-supply for additional jobs to be filled.

## Updated Economic Forecasts

- 7.17 As this project developed a new set of economic forecasts were provided by Lichfields who are working with the Council on an Employment Land Review Update (ELR). These forecasts have taken account of Covid and the below analysis is undertaken to look at the housing implication of these.
- 7.18 The figure below shows the new forecasts and sets them alongside a pre-Covid analysis. The figure clearly shows a notable decline in jobs through 2020 and 2021, but that these jobs are all expected to be recovered moving through to 2038, indeed by 2038 the number of jobs in Sheffield is forecast to be virtually identical to the previous forecasts.

**Table 7.6 Experian Job Forecasts – pre- and post-Covid models (2018-38)**



Source: Experian, 2021

- 7.19 The table below shows the number of jobs in 2021 and 2038 in the two forecasts. A further line is provided which shows the 2021 position from the pre-Covid forecasts and the 2038 position from the latest forecast. It is the data in the final row that has been used in the modelling and this essentially assumes (as with previous analysis) that the loss of jobs will be made up by unemployed residents moving back into work over the next three years or so.

**Table 7.7 Experian Job Forecasts – pre- and post-Covid models (2018-38)**

	Jobs (2021)	Jobs (2038)	Total Change in jobs	Change in jobs Per Annum
April-21	291,300	331,800	40,500	2,382
March 2020 (pre-Covid)	301,900	332,500	30,600	1,800
Combined for model	301,900	331,800	29,900	1,759

Source: Experian, 2021

7.20 The table below show how the jobs figure has been translated into the change in economically active residents and secondly how this would translate into a number of homes. This is based on the different commuting assumptions.

**Table 7.8 Forecast job growth and change in resident workforce with double jobbing and commuting allowance (2021-38) – updated forecast**

	Updated forecast	
	Census commuting	1:1 commuting
Number of additional jobs (2021-38)	29,900	29,900
Double jobbing allowance	0.962	0.962
Number of workers required	28,767	28,767
Commuting ratio	0.935	1
Total change in economically active	26,885	28,767

Source: Derived from a range of sources as described

7.21 The following table then translates this into a calculation of housing need. As shown, to support the revised economic forecast there would need to be provision of around 1,747 to 1,820 homes each year in Sheffield.

**Table 7.9 Projected housing need – updated forecast – Sheffield**

		Households 2021	Households 2038	Change in households	Per annum	Dwellings (per annum)
Updated forecast	Census commuting	247,656	276,493	28,837	1,696	1,747
	1:1 commuting	247,656	277,700	30,044	1,767	1,820

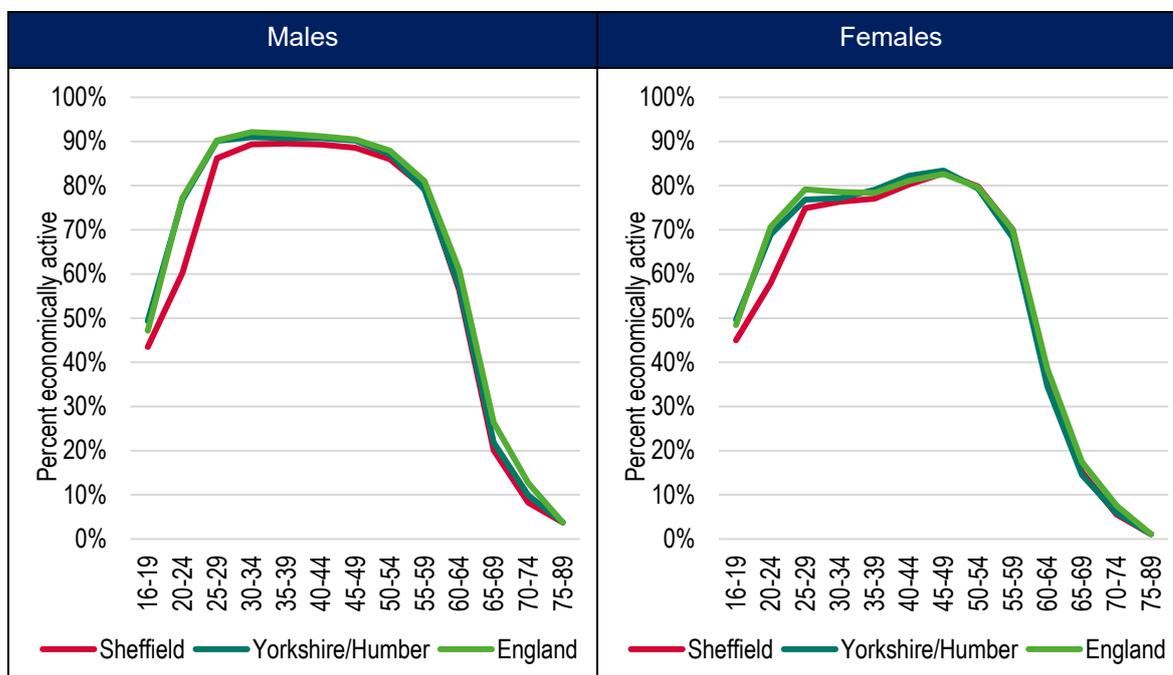
Source: Demographic projections

7.22 As these figures are again significantly below the 2,923 dwellings per annum resulting from the Standard Method there is still no requirement for the Council to plan for a greater number of homes to address economic growth.

## 8. SENSITIVITIES TO ECONOMIC ACTIVITY RATES

- 8.1 The core analysis linking jobs to homes draws on economic activity data from the 2011 Census and then applies OBR economic activity rates (and changes to these) for the UK. As a sensitivity, the analysis below looks to see what the impact on the jobs/homes link would be of having a greater improvement to economic activity than has been modelled.
- 8.2 The figure and table below compare economic activity rates by age and sex for each of Sheffield, the Yorkshire/Humber region and England (as of 2011). The analysis shows for younger age groups in particular (up to about 30-34) that activity rates in Sheffield are relatively low compared with other locations.
- 8.3 Arguably, this might mean that Sheffield has potential for greater improvements to economic activity in some age groups; however, it is likely that at least part of the difference between areas will be due to students, who typically have low activity rates. That said, even for older age groups, the activity rates in Sheffield are generally slightly lower than in other locations.

Table 8.1 Economic Activity Rates by age and sex (2011)



Source: 2011 Census

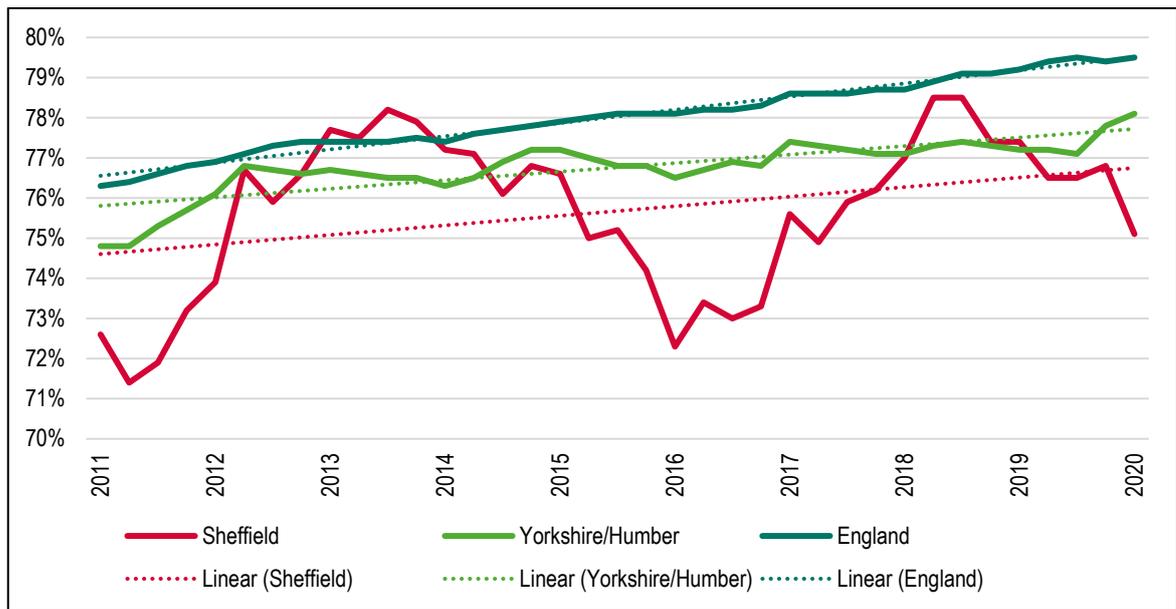
**Table 8.2 Economic Activity Rates by age and sex (2011)**

	Males			Females		
	Sheffield	Region	England	Sheffield	Region	England
16-19	43.5%	49.3%	47.2%	45.0%	49.6%	48.4%
20-24	60.2%	76.7%	77.2%	57.9%	68.9%	70.6%
25-29	86.2%	90.1%	90.2%	74.9%	76.8%	79.2%
30-34	89.3%	91.0%	92.1%	76.4%	77.1%	78.6%
35-39	89.5%	90.8%	91.8%	77.0%	79.0%	78.4%
40-44	89.3%	90.8%	91.2%	80.3%	82.2%	81.1%
45-49	88.6%	90.2%	90.4%	82.8%	83.4%	82.6%
50-54	86.0%	87.1%	87.9%	79.8%	79.3%	79.6%
55-59	79.5%	79.1%	81.0%	70.0%	68.2%	70.0%
60-64	56.5%	57.1%	61.0%	36.4%	34.6%	38.5%
65-69	20.1%	21.8%	26.4%	15.2%	14.5%	17.5%
70-74	8.2%	9.9%	12.7%	5.6%	5.9%	7.6%
75-89	3.8%	3.8%	3.8%	1.1%	1.1%	1.1%

Source: 2011 Census

- 8.4 As well as looking at comparing rates across areas in 2011, it is possible to investigate how rates might have changed since that date. Data for this is drawn from the Annual Population Survey (APS) and it should be noted that this source is often quite volatile (with larger error margins) at a smaller-area level.
- 8.5 The analysis below looks at the economic activity rate for people aged 16-64 and also a rate expressed for the total population aged 16 and over. Whilst the APS does provide more detailed information by age and sex, it is not considered sufficiently robust to present in this report.
- 8.6 The figure below shows the activity rate for the 16-64 population. For Sheffield, this highlights the volatility of this measure with apparent peak and troughs in the measure being likely to be due to sample size issues rather than highlighting any trend.
- 8.7 By drawing a linear trend line through the data, it is possible to get some idea of the trend since 2011 – for this age group the data does suggest some improvement in economic activity in Sheffield, but improving at broadly the same rate as seen across the region and country.

**Table 8.3 Trends in economic activity rate – both sexes (population aged 16-64)**

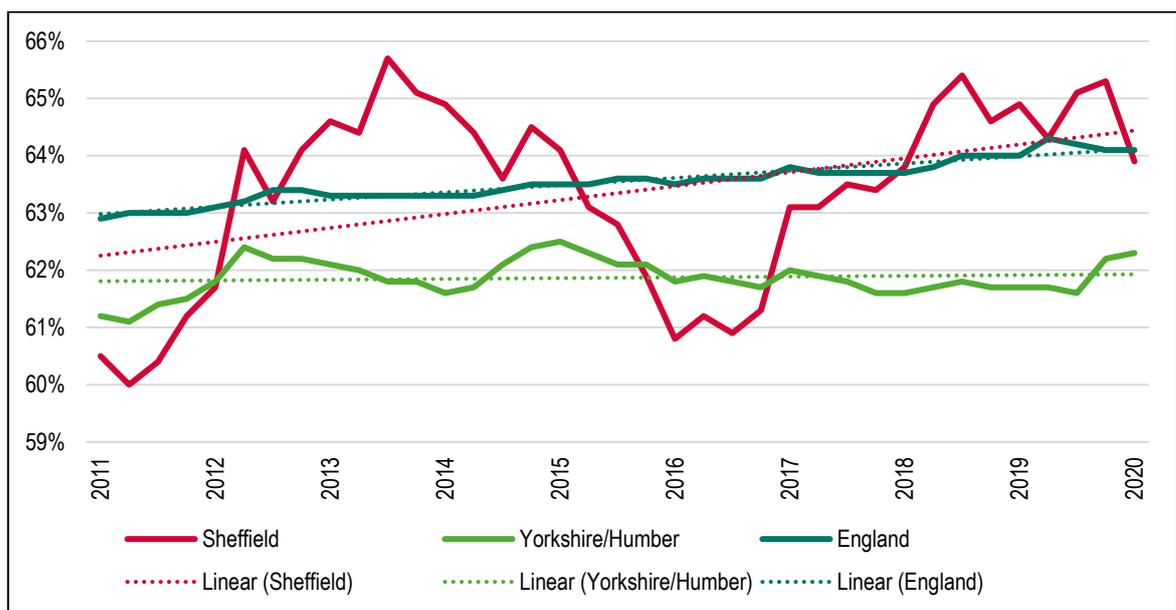


Source: Annual Population Survey

8.8 For the 16+ age group, the analysis (when looking at linear trends) suggests a greater increase in activity rates than seen either nationally or regionally. The analysis also suggests that activity rates could be close to the national average.

8.9 Some caution should be exercised with this conclusion as the rate will be significantly impacted by the proportion of older people in the population. In Sheffield, the proportion of people aged 65 and over is relatively low.

**Table 8.4 Trends in economic activity rate – both sexes (population aged 16+)**



Source: Annual Population Survey

- 8.10 Overall, it is difficult on the basis of this analysis to say exactly what has been happening to economic activity rates since 2011. A sensitivity has therefore been provided which assumes that between 2011 and 2021 activity rates (by age and sex) recovered half of the difference between local (Sheffield) and regional figures and that from 2021 to 2038 they recovered another half, so that by 2038 economic activity rates are assumed to be the same as seen regionally.
- 8.11 The first table below shows how many jobs might be supported with these higher activity rates. This shows a potential for between 69,300 and 74,100 jobs under the Standard Method (excluding any additional jobs recovered as a result of Covid-19).

**Table 8.5 Jobs supported by demographic projections (2021-38) – Sheffield – revised economic activity rates**

		Total change in economically active	Allowance for net commuting	Allowance for double jobbing (= jobs supported)
2018-based SNPP	Census commuting	35,730	38,233	39,738
	1:1 commuting	35,730	35,730	37,137
Standard Method	Census commuting	66,633	71,300	74,107
	1:1 commuting	66,633	66,633	69,257
Issues/Options requirement <sup>6</sup>	Census commuting	45,382	48,561	50,472
	1:1 commuting	45,382	45,382	47,169

Source: Derived from a range of sources as described

- 8.12 In terms of housing need set against the various forecasts it can be seen that the highest figure (Policy-on with 1:1 commuting) would derive a housing need of 1,994 dwellings per annum, lower than the 2,323 figure seen when applying the base economic activity assumptions (see Table 7.5).

**Table 8.6 Projected housing need – job-led scenarios – Sheffield – higher economic activity**

		Households 2021	Households 2038	Change in households	Per annum	Dwellings (per annum)
Baseline	Census commuting	247,656	268,422	20,765	1,221	1,258
	1:1 commuting	247,656	269,368	21,712	1,277	1,315
Policy-on	Census commuting	247,656	278,889	31,232	1,837	1,892
	1:1 commuting	247,656	280,568	32,912	1,936	1,994
Midpoint	Census commuting	247,656	273,656	25,999	1,529	1,575
	1:1 commuting	247,656	274,968	27,311	1,607	1,655
Updated forecast	Census commuting	247,656	271,451	23,794	1,400	1,442
	1:1 commuting	247,656	272,608	24,952	1,468	1,512

<sup>5</sup> This is essentially the Standard Method excluding the Urban Centres Uplift

<sup>6</sup> This is essentially the Standard Method excluding the Urban Centres Uplift

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Source: Demographic projections

- 8.13 Overall, the analysis suggests that there may be some potential for Sheffield to see improvements to economic activity over and above that forecast at a national level by OBR. However, the analysis about the extent of any recent improvements of the potential for further improvements is not clear-cut.
- 8.14 In modelling an assumption that activity rates in Sheffield reach the same level as seen regionally by 2038 it is estimated that the housing need associated with a range of economic forecasts would reduce by about 300 dwellings per annum.
- 8.15 In concluding on housing need associated with economic forecasts it would be reasonable for the Council to consider the range between the core analysis (which links to OBR activity rate assumptions) and the analysis with further improvements to activity rates. For the highest of the forecasts modelled, this would give a range of housing need between about 2,000 and 2,300 dwellings per annum.
- 8.16 In either case this is still significantly lower than the Local Housing Need figure as calculated through the standard method. Therefore, there is no justification, in economic terms at least, for the city to increase their housing requirement to exceed the standard method particularly with the inclusion of the urban uplift.

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## 9. SUMMARY

- 9.1 Analysis has been undertaken to consider demographic trends, in particular looking at past trends in population growth and future projections. The analysis draws on the 2018-based subnational population projections (SNPP) and the 2018-based household projections (SNHP). The analysis also looks at the most recent population estimates (again from ONS) which date to mid-2019.
- 9.2 The city has a relatively young age structure, with 16.1% of the population estimated to be aged 65 and over in 2019 (compared to a national average of 18.4%).
- 9.3 Past population growth in Sheffield has been almost identical to national trends. In 2019, it is estimated that the population of the city had risen by 14% from 2001 levels, this is in contrast to an 11% rise across the region and 14% nationally. Population growth is driven by both net migration and natural change (i.e. more births than deaths).
- 9.4 The 2018-based SNPP are the latest ONS projections (which are trend based) and show a faster projected growth in Sheffield than other areas (including regionally and nationally)). Population growth is projected to be concentrated in the working age population although there is a larger percentage growth in the elderly population.
- 9.5 Population growth can be converted into estimates of household growth by using household representative rates (HRR). HRRs can be described in their most simple terms as the number of people who are counted as heads of households (or in this case the more widely used Household Reference Person (HRP)). Data about HRRs is taken from ONS household projections.
- 9.6 Using the information from the 2018-based SNPP and SNHP a bespoke projection has been developed that links to the standard method local housing need figure of 2,923 dwellings per annum (dpa) – this considers the level of population growth and household formation that might be expected if this delivery is achieved (in the 2021-38 period).
- 9.7 This bespoke projection suggests that population growth might be expected to be higher than suggested in the latest official projections and that the age structure changes will proportionally include more people aged under 65.
- 9.8 Overall, in the 2021-38 period, delivery of 2,923 dpa is projected to see an increase in population of 16.2% (96,838 more people) compared with a 7.7% increase (45,490) in the 2018-based SNPP. This is because of assumed higher levels of migration.

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- 9.9 Were the migration to not materialise, it is more likely that the development industry would stop or slow down the rate of building, rather than building homes to remain empty. Of the 96,838 difference in population increase, some 58% (56,424) is accounted for by a projected uplift in the number of people aged 16-64.
- 9.10 This level of population growth has also been translated into the number of jobs it could support. This calculation takes into account a wide range of factors including, the number of people with more than one job, commuting ratios and economic activity rates.
- 9.11 The analysis shows that the level of population growth associated with the standard method could support between 59,414 and 63,575 additional jobs in the city depending on the assumptions around commuting.
- 9.12 Finally, the analysis briefly considered the link between economic growth and housing need. A range of economic growth scenarios were considered including examining economic forecasts from the Regional Econometric Model produced by Experian (24,424 additional jobs), more recent Experian Forecasts from 2021 (29,900 additional jobs), extrapolating past trends which broadly aligned with the policy-on scenario from the 2015 Strategic Economic Plan (43,350 additional jobs) as well as developing a mid-point (33,887 additional jobs).
- 9.13 Modelling the required labour supply increase linked to these forecasts suggests a need for up to 2,323 dwellings per annum although this could be reduced by around 300 dpa to 1,994 dpa, if further improvement to economic activity rates could be achieved.
- 9.14 As all these figures are lower than the Standard Method (2,923 dwellings per annum) there is no reason to exceed this level of housing growth to meet the economic needs of the city. Furthermore the standard method also generates an excess level of economically active population in comparison to economic forecasts.
- 9.15 Notably, there is a better balance between housing growth using the older version of the standard method i.e. without the urban centres uplift (Step 3 - 2,165 dpa) and the ranges suggested to meet the highest of the economic growth herein (1,794 to 2,323 dpa).
- 9.16 The tables below show a summary of the findings for all of the core scenarios. The data is based on the modelled housing need with an uplift for apparent suppression in younger age groups and the scenarios use the baseline economic activity rate assumptions. Two tables are provided, the first for the 2021-38 period and the second providing per annum figures. More detailed outputs are provided in the appendix.

**Table 9.1 Summary of Population Growth, Dwelling Need and Jobs Supported Under Core Scenarios (total 2021-38)**

		Population growth	Dwellings	Jobs supported
2018-based SNPP	Census commuting	46,620	29,423	30,552
	1:1 commuting			28,553
Standard Method	Census commuting	96,838	49,691	63,575
	1:1 commuting			59,414
Issues/Options requirement	Census commuting	63,126	36,227	40,893
	1:1 commuting			38,217
Baseline forecast	Census commuting	38,648	26,451	24,424
	1:1 commuting	41,190	27,467	
Policy on/ Past Trend	Census commuting	66,777	37,686	43,350
	1:1 commuting	71,289	39,487	
Midpoint	Census commuting	52,714	32,069	33,888
	1:1 commuting	56,239	33,477	
Updated forecast	Census commuting	46,787	29,702	29,900
	1:1 commuting	49,899	30,945	

Source: Derived from a range of sources as previously described

**Table 9.2 Summary of Population Growth, Dwelling Need and Jobs Supported Under Core Scenarios (per annum 2021-38)**

		Population growth	Dwellings	Jobs supported
2018-based SNPP	Census commuting	2,742	1,731	1,797
	1:1 commuting			1,680
Standard Method	Census commuting	5,696	2,923	3,740
	1:1 commuting			3,495
Issues/Options requirement	Census commuting	3,713	2,131	2,405
	1:1 commuting			2,248
Baseline forecast	Census commuting	2,273	1,556	1,437
	1:1 commuting	2,423	1,616	
Policy on/ Past Trend	Census commuting	3,928	2,217	2,550
	1:1 commuting	4,193	2,323	
Midpoint	Census commuting	3,101	1,886	1,993
	1:1 commuting	3,308	1,969	
Updated forecast	Census commuting	2,752	1,747	1,759
	1:1 commuting	2,935	1,820	

Source: Derived from a range of sources as previously described

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## **A1. MODELLING OUTPUTS**