Basingstoke and Deane

Demographic analysis & forecasts

Including an addendum on additional scenario analysis

December 2013

For the attention of:

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Acknowledgements

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Executive summary

Objectives

E1. Basingstoke & Deane Borough Council has sought to update its demographic evidence with the development of a suite of population, household and housing forecasts for Basingstoke & Deane using the latest evidence from:

- 2011 Census statistics on population and households
- Revised mid-year population estimates for the period 2002-10 (ONS)
- 2011-based household projections for 2011-21 (CLG)

E2. A suite of growth scenarios have been tested for Basingstoke & Deane. These scenarios have been developed using POPGROUP technology; they use the latest available statistics from both ONS and CLG; they evaluate trend, policy and economic considerations; they are accompanied by a transparent definition of key assumptions; and they are presented in a consistent format that contrasts the impact of scenario assumptions upon changes to population, households, dwellings, labour force and jobs. All scenarios are run from a 2011 base year, with a 2029 horizon. For context, historical data are included for 2001-10.

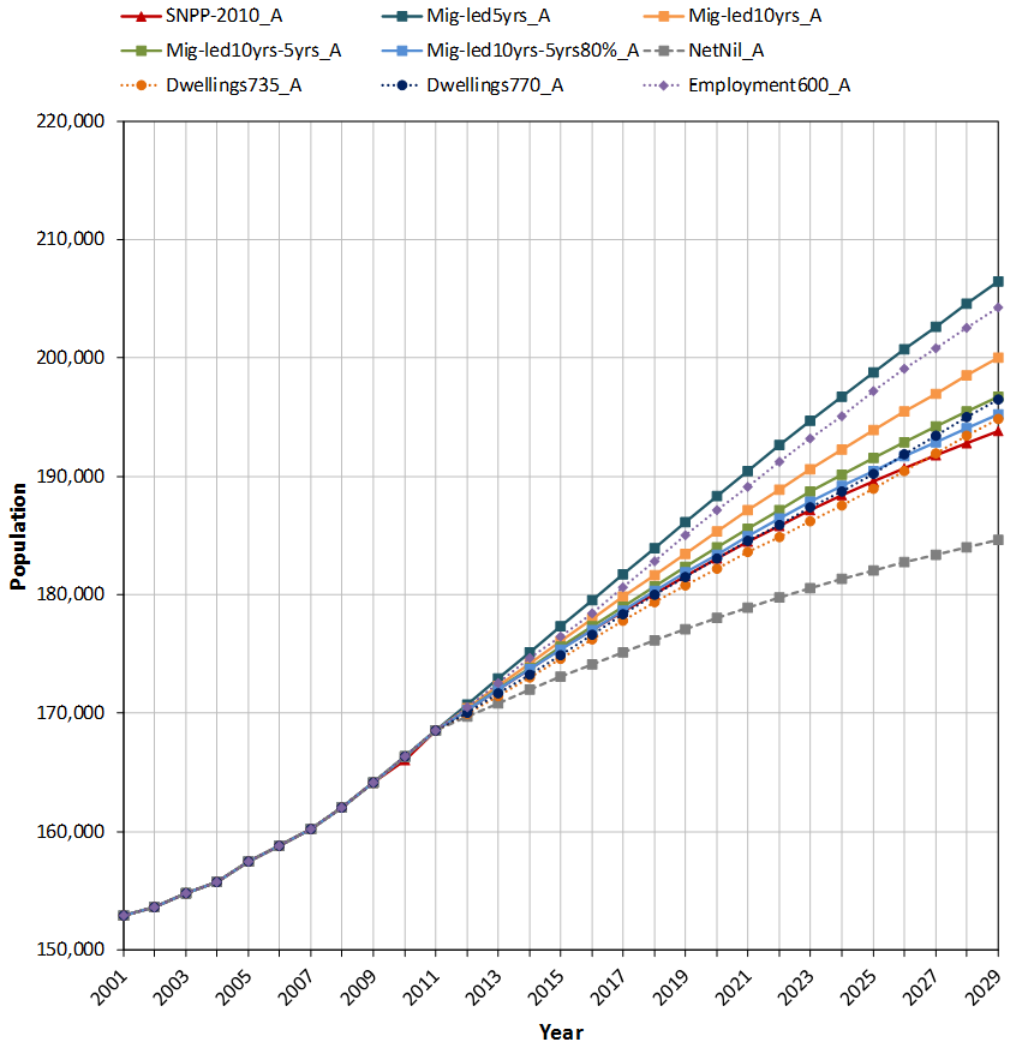
Outcomes

E3. The analysis of scenario outcomes is complicated by the 'choice' of appropriate headship rates with which household (and dwelling) growth is estimated. The scenario summary presented below relates to the application of CLG's 2011-based household headship rates, with the 2011-21 trend continued after 2021 (A). A second set of scenarios are tested with the CLG's 2011-based rates 'fixed' after 2021 (B) and thirdly, with the CLG's 2008-based rates applied (C).

E4. The latest demographic evidence has provided the basis for the development of alternative trend projections that consider the potential future impact of migration. Continuation of the most recent (five year) trends would suggest substantial population and household growth over the next 20 years. Possibly more realistic assumptions (based on a ten year history of internal migration and a five-year history of international migration) suggest lower growth, which is reduced further if consideration is given to a likely reduction in net immigration to the UK over the next 10-15 years.

Summary of scenario forecasts

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021



Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_A	37,912	22.5%	17,297	24.8%	1,082	983	663
Employment600_A	35,722	21.2%	16,471	23.7%	980	936	600
Mig-led10yrs_A	31,457	18.7%	14,405	20.7%	739	819	496
Mig-led10yrs-5yrs_A	28,195	16.7%	13,379	19.2%	616	761	401
Dwellings770_A	27,919	16.6%	13,543	19.5%	617	770	375
Mig-led10yrs-5yrs80%_A	26,649	15.8%	13,152	18.9%	561	748	361
Dwellings735_A	26,280	15.6%	12,928	18.6%	540	735	328
SNPP-2010_A	25,251	15.0%	13,934	19.8%	561	792	360
NetNil_A	16,062	9.5%	9,668	13.9%	0	550	99

Recommendations

E5. This analysis has not sought to provide a definitive view on Basingstoke & Deane's future housing requirement. Its objective has been to use the latest published statistics within a robust forecasting model, to produce a suite of alternative growth forecasts that combine demographic, economic and policy perspectives.

E6. It is recommended that Basingstoke & Deane Borough Council considers this new evidence in the development of its Local Plan, giving particular consideration to assumptions that provide a longer-term historical perspective on internal migration and that recognise the uncertainty associated with the future impact of international migration.

E7. With regard to household formation rates, Basingstoke & Deane Borough Council should consider the 'range' of outcomes suggested by the 2008-based and 2011-based headship rate scenarios, given that each of CLG's household models has been calibrated from data collected in very different housing market conditions.

Summary of scenario dwelling growth estimates

	Estimated dwellings per year 2011-29		
Scenario	A	C	*Average*
Mig-led5Yrs	983	1,084	*1,034*
Employment600	936	1,036	*986*
Mig-led10Yrs	819	915	*867*
SNPP-2010	792	882	*837*
Mig-led10Yrs-5Yrs	761	853	*807*
Mig-led10Yrs-5Yrs80%	748	835	*791*
Dwellings770	770	770	*770*
Dwellings735	735	735	*735*
NetNil	550	634	*592*

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 census but following the original trend thereafter

E8. Finally, Basingstoke & Deane Borough Council should recognise that important changes to its population age profile are inevitable, regardless of the future impact of migration. The population aged 65+ will increase in size and proportion over the next 20 years, with a consequent impact upon housing provision and public services.

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2. Introduction

Context

2.1 In December 2012, Basingstoke & Deane Borough Council (BDBC) commissioned Edge Analytics to complete an independent review of its work on calculating a locally-derived housing figure (BDBC, 2012a). The review sought not to recommend a housing number but, given the guidelines established by the National Planning Policy Framework (NPPF), to consider the methodologies that had been employed and to recommend any additional datasets, analytical approaches or analysis that might assist in finalising BDBC's Local Plan.

2.2 The report recommended that BDBC should extend its evidence base, making use of a more formal demographic model to derive alternative growth forecasts for the Borough. This would enable the direct integration of new demographic evidence from the Department for Communities and Local Government's (CLG) 2011-based household projection model and the revised 2002-10 mid-year population estimates from the Office for National Statistics (ONS).

Requirements

2.3 In line with these recommendations, BDBC commissioned Edge Analytics to conduct additional demographic analysis for Basingstoke & Deane, including the development of a suite of population, household and housing forecasts using POPGROUP demographic modelling technology.

2.4 These forecasts have been produced for a 2011-29 time period, with historical data provided for 2001-11. The following key datasets have been used within the analysis:

- 2011 Census statistics on population and households
- Revised mid-year population estimates for the period 2002-10 (ONS)
- 2011-based household projections for 2011-21 (CLG)

2.5 The following scenario forecasts are presented in this report:

- A trend projection consistent with the ONS 2010-based sub-national population projection (SNPP-2010)

- Alternative trend projections with a 2011 base year, using the latest evidence from the revised 2002-10 mid-year estimates to set migration assumptions
- A net nil migration scenario that includes in- and out-migration but assumes a zero net balance
- Housing-led scenarios, with alternative dwelling growth trajectories determining demographic change
- A jobs-led scenario, using a forecast of economic growth in Basingstoke & Deane to drive demographic change

Report structure

2.6 Section 2 provides a summary of the geographical context of Basingstoke & Deane.

2.7 Section 3 details the key data inputs, assumptions and model methodology that have been deployed in the development of the scenario forecasts.

2.8 Section 4 provides a short commentary on the new demographic evidence available from the latest household projections (CLG) and the revised mid-year estimates for 2002-10 (ONS).

2.9 Section 5 describes the suite of scenario alternatives, developed to evaluate trend and policy growth trajectories.

2.10 Section 6 summarises the outcomes of each of these scenarios, presenting growth in terms of population, households, dwellings, labour force and jobs impacts.

2.11 A concluding section summarises the evidence and makes a number of recommendations for BDBC to consider.

3. Area definition

3.1 The geographical focus of the analysis presented in this report is the borough of Basingstoke & Deane, which is located within the county of Hampshire and on the northern edge of the Enterprise M3 local enterprise partnership (LEP). The district of West Berkshire is located to the north of Basingstoke & Deane; Hart is located to the east; Winchester and East Hampshire to the south; and the district of Test Valley to the west (Figure 1).

3.2 In 2011, Basingstoke & Deane had a population of approximately 168,500, with the main concentration in its largest town, Basingstoke. Other significant settlements include Bramley, Kingslere, Oakley, Overton, Tadley and Whitchurch.

3.3 With its central location on the M3 corridor, between London and Surrey towns to the east and Winchester and urban South Hampshire centres to the south, Basingstoke & Deane is exposed to a diverse mix of economic linkages, commuting behaviours and migration dynamics.

Figure 1: Basingstoke & Deane

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4. Data inputs, assumptions & methodology

Summary

4.1 The development and evaluation of the suite of scenarios of demographic change is dependent upon the collection of a range of data inputs and the derivation of a number of key assumptions. These provide an historical perspective on demographic change and the basis for the calculation of demographic parameters that determine future growth trajectories.

4.2 All data and assumptions are held within POPGROUP and Derived Forecast 'input' files, configured to enable the specific scenarios to be evaluated. To evaluate transparency and to aid interpretation of output, the following sub-sections provide a summary of the population, household and labour force data inputs, the key assumptions and the methodology used to produce the scenario outcomes detailed in sections 5 and 6.

Population, births, deaths and migration

Population

4.3 Historical population statistics are provided by the mid-year population estimates for 2001 to 2011. All data are recorded by single-year of age and sex. These data include the revised mid-year population estimates for 2002-10, released by ONS in May 2013, providing consistency in the measurement of the components of change (births, deaths, internal migration and international migration) between the 2001 and 2011 Censuses.

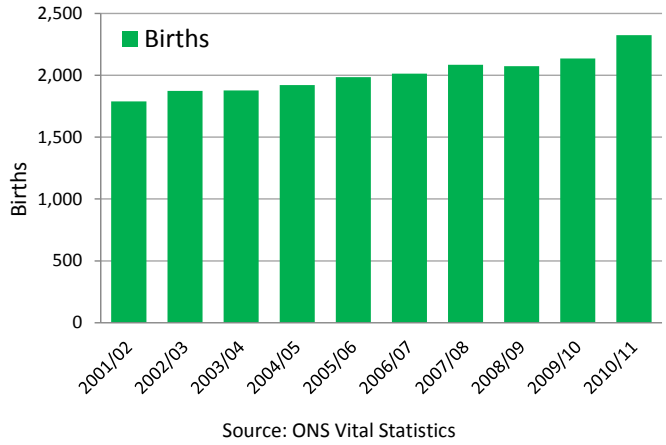
4.4 A summary analysis of the impact of the latest mid-year estimate revisions upon Basingstoke & Deane's population and its components of change is provided in section 4.

Births and fertility

4.5 Historical mid-year to mid-year counts of births by sex from 2001/2 to 2010/11 have been sourced from ONS Vital Statistics (Figure 2).

4.6 A 'national' age-specific fertility rate (ASFR) schedule, which measures the expected fertility rates by age and sex for England in 2011/12, is included in the POPGROUP model assumptions. In order to provide more appropriate area-specific fertility assumptions, a district-specific fertility

differential has been derived from the average of Basingstoke & Deane's total fertility rate (TFR) over the latest five year period for which data is available (2006/7 to 2010/11). In combination with the population-at-risk, this provides the basis for the calculation of births in each year of the forecast period.



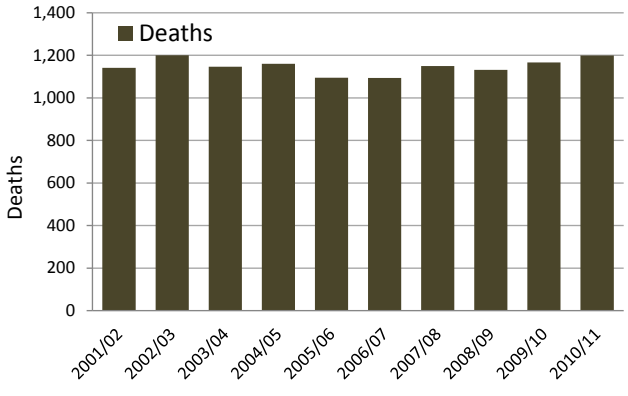
Source: ONS Vital Statistics

Figure 2: Basingstoke & Deane – births 2001/2 to 2010/11

4.7 Long-term assumptions on change in age-specific fertility rates are taken from ONS 2010-based national population projections.

Deaths and mortality

4.8 Historical mid-year to mid-year counts of deaths by age and sex from 2001/2 to 2010/11 have been sourced from ONS Vital Statistics (Figure 3).



Source: ONS Vital Statistics

Figure 3: Basingstoke & Deane – deaths 2001/2 to 2010/11

4.9 A 'national' age-specific mortality rate (ASMR) schedule, which measures the expected mortality rates by age and sex for England in 2011/12, is included in the POPGROUP model assumptions. To

provide more appropriate area-specific fertility assumptions, a district-specific mortality differential has been derived from the average of Basingstoke & Deane's standardised mortality ratio (SMR) over the latest five year period for which data is available (2006/7 to 2010/11). In combination with the population-at-risk, these provide the basis for the calculation of deaths in each year of the forecast period.

4.10 Long-term assumptions on change in age-specific mortality rates are taken from ONS 2010-based national population projections.

Internal migration

4.11 The original source of internal migration statistics is the Patient Register Data Service (PRDS), which captures the movement of patients as they register with a GP. Historical mid-year to mid-year counts of in- and out-migration by five year age group and sex from 2001/2 to 20010/11 have been sourced from the 'components-of-change' files, which underpin the ONS mid-year estimates. Any 'adjustments' made to the mid-year estimates to account for prisoner and armed forces movements are included in the internal migration balance.

4.12 For the SNPP-2010 scenario, age-specific migration rate (ASMigR) schedules for both in- and out-migration are drawn directly from the ONS 2010-based assumptions. For the alternative trend scenarios, migration rate assumptions have been derived from historical data, using both a five year and a ten year history to determine these assumptions. In combination with the population-at-risk, these provide the basis for the calculation of internal migration flows in each year of the forecast period.

4.13 Housing-led and jobs-led scenarios calculate their own migration assumptions to ensure an appropriate balance between population, households and the labour force, given the 'constraints' on growth that are imposed in each scenario.

International migration

4.14 Historical mid-year to mid-year counts of total immigration and emigration from 2001/2 to 2009/10 have been sourced from the 'components-of-change' files that underpin the ONS mid-year estimates. Asylum cases are included in the international migration statistics. Data is not yet available for the 2010/11 period.

4.15 For the SNPP-2010 scenario, international migration counts are drawn directly from the ONS 2010-based assumptions. For the alternative trend scenarios, migration assumptions have been

derived from historical data, using both a five year and a ten year history to determine these data. The alternative housing-led and jobs-led scenarios calculate their own migration assumptions to ensure an appropriate balance between population, households and the labour force, given the 'constraints' on growth that are imposed in each scenario.

Households

4.16 Household statistics and assumptions have been taken from the 2001 and 2011 Censuses and from the 2008-based and 2011-based household projection models (CLG). In April 2013, CLG released its latest household projections for local authority districts in England, incorporating household data from the 2011 Census and underpinned by the 2011-based interim sub-national population projection.

4.17 A summary analysis of the impact of the latest household model upon projected rates of household formation is provided in section 4.

4.18 Household projections are derived through the application of household headship rates (also referred to as 'household representative rates') to an age-sex disaggregated population. The projected household headship rates used in the 2011 household model have been derived using 2011 Census data in combination with statistics from the Labour Force Survey (LFS).

4.19 Household-types are modelled within a 17-fold classification (Table 1).

Table 1: Household type classification

CLG Code	DF Label	Household Type
OPM	OPMAL	One person households: Male
OPF	OPFEM	One person households: Female
OCZZP	FAMC0	One family and no others: Couple: No dependent children
OC1P	FAMC1	One family and no others: Couple: 1 dependent child
OC2P	FAMC2	One family and no others: Couple: 2 dependent children
OC3P	FAMC3	One family and no others: Couple: 3+ dependent children
OL1P	FAML1	One family and no others: Lone parent: 1 dependent child
OL2P	FAML2	One family and no others: Lone parent: 2 dependent children
OL3P	FAML3	One family and no others: Lone parent: 3+ dependent children
MCZDP	MIX C0	A couple and one or more other adults: No dependent children
MC1P	MIX C1	A couple and one or more other adults: 1 dependent child
MC2P	MIX C2	A couple and one or more other adults: 2 dependent children
MC3P	MIX C3	A couple and one or more other adults: 3+ dependent children
ML1P	MIX L1	A lone parent and one or more other adults: 1 dependent child
ML2P	MIX L2	A lone parent and one or more other adults: 2 dependent children
ML3P	MIX L3	A lone parent and one or more other adults: 3+ dependent children
OTAP	OTHHH	Other households
TOT	TOTHH	Total

4.20 Household projections take explicit account of the 'population-not-in-households'. For the 2011-based household model this data has been drawn directly from the 2011 Census.

4.21 The relationship between households and dwellings is modelled using a 'vacancy rate' based on the ratio between households (occupied, second homes and vacant) and dwellings (shared and unshared) from the 2011 Census. The calculated vacancy rate for Basingstoke & Deane is 2.3%. This value remains constant throughout the forecast period.

Employment & economic activity

4.22 There are three key data items required to derive labour-force projections and to evaluate jobs-led forecasts: the commuting ratio, an unemployment rate and economic activity rates. Economic activity rates provide the basis for calculating the size of the labour force within the population. The commuting ratio and unemployment rate control the balance between the size of the labour force and the number of jobs available within an area.

Economic activity rates

4.23 Economic activity rates have been derived from a combination of 2001 Census statistics and the latest evidence from the Labour Force Survey (via NOMIS). NOMIS data provide an average economic activity rate for the period 2007-11 by broad age-group.

4.24 Using the 2001 Census data, these activity rates have been disaggregated to provide an economic activity rate by five year age-group and sex for all labour-force ages to age 74 (Figure 4).

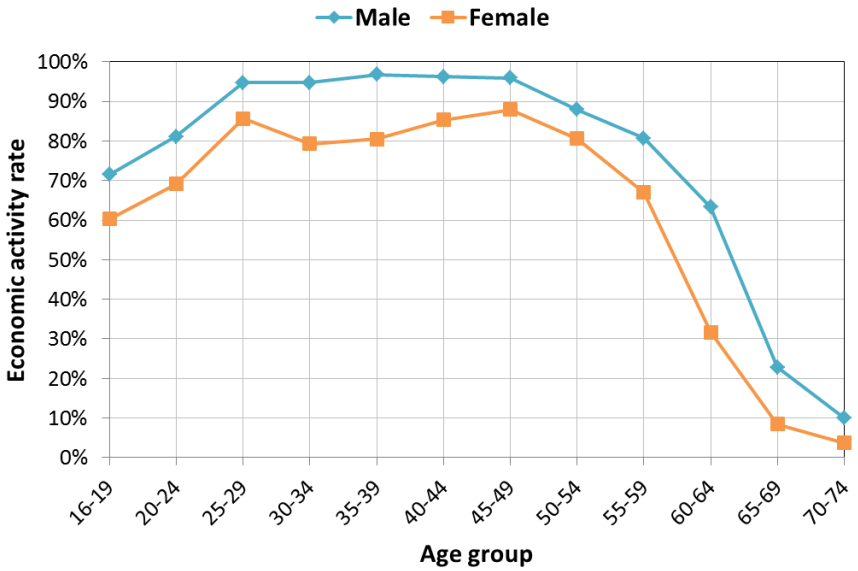


Figure 4: Economic activity rates 2011 - Basingstoke & Deane
Source: NOMIS; ONS

4.25 To account for an expected increase in the rate of labour force participation in the older age groups, economic activity rates for the 50-74 age range have been incremented by 10% over the 2011-29 forecast period.

Unemployment rate

4.26 An average unemployment rate of 5.6% (age-groups 16-64) has been calculated from Basingstoke & Deane unemployment statistics for the period 2007-12 (sourced from NOMIS). This unemployment rate remains constant throughout the projection period.

Commuting Ratio

4.27 Using 2001 Census statistics, a commuting ratio has been derived as the balance between the size of the resident labour force and the number of the jobs available in the Borough. The derived ratio of 1.03 for Basingstoke & Deane indicates that there is a net outflow of commuters. The commuting ratio is held constant throughout the projection period.

Forecasting methodology

4.28 Forecasts have been developed using POPGROUP technology. Population projections delivered using POPGROUP use a standard cohort component methodology (the methodology used by the UK statistical agencies). The household projections use a standard household headship rate as employed by CLG for its household projection statistics. A more detailed description of the population and household projection methodologies is available from the User Guide and Reference Manual on the POPGROUP website (CCSR, 2013).

4.29 The following diagrams (Figure 5 and Figure 6) provide a schematic illustration of the operation of the POPGROUP and Derived Forecast (household and labour force) methodologies.

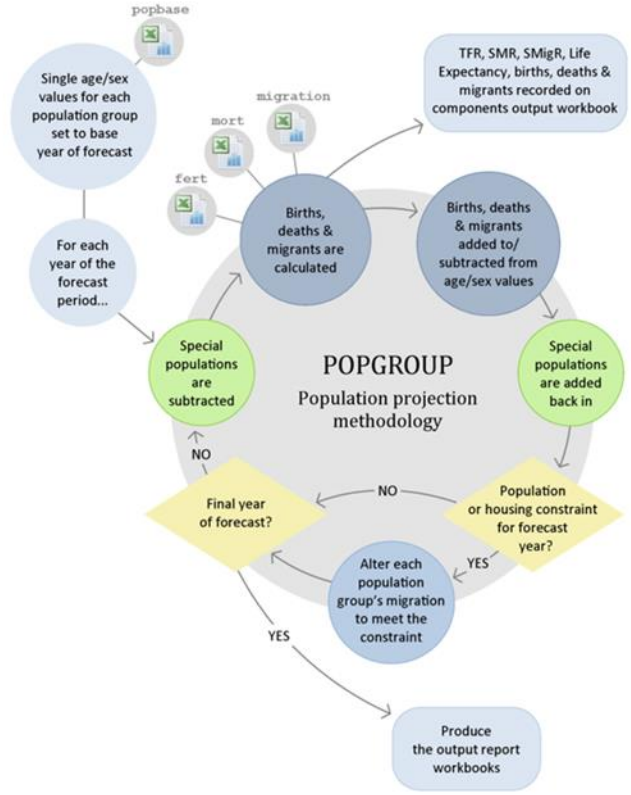
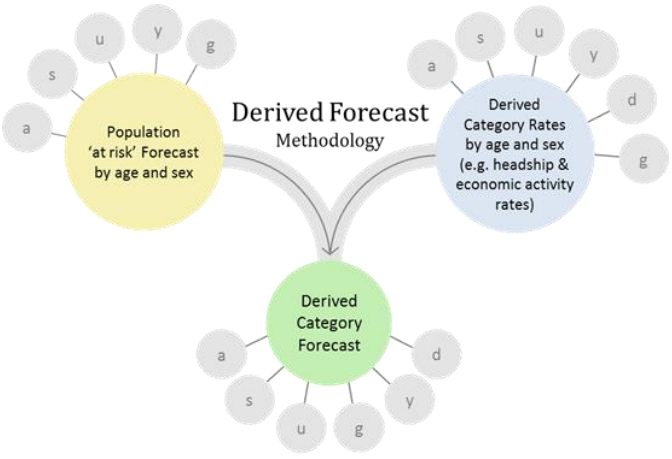


Figure 5: POPGROUP population projection methodology



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

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

Figure 6: Derived Forecast Model: household & labour force projection methodology

5. Summarising the latest evidence

New evidence

5.1 In April 2013, CLG released its new household projections for local authority districts in England. These household projections are underpinned by the 2011-based interim sub-national projections published by ONS in September 2012 (CLG, 2013a; 2013b; 2013c).

5.2 Also in April 2013, ONS released its 'recalibrated' time-series of mid-year population estimates for the 2002-10 period (ONS, 2013). These take account of the newly released 2011 Census statistics and have recalculated the components of change (specifically international migration) that have driven local population growth between the 2001 and 2011 Census dates.

5.3 This section summarises the impact that these data releases have had on the demographic profile of Basingstoke & Deane, providing a context for the new scenario development reported in sections 5 and 6.

Household projections

5.4 Household projections are derived through the application of household headship rates (also referred to as 'household representative rates' in the CLG documentation). The projected household headship rates used in the 2011 household model have been derived using 2011 Census data in combination with statistics from the Labour Force Survey.

5.5 The new household projections replace the previous, 2008-based household projections. They provide an update on likely household growth trajectories, taking account of the unprecedented economic conditions that have affected local communities since 2008.

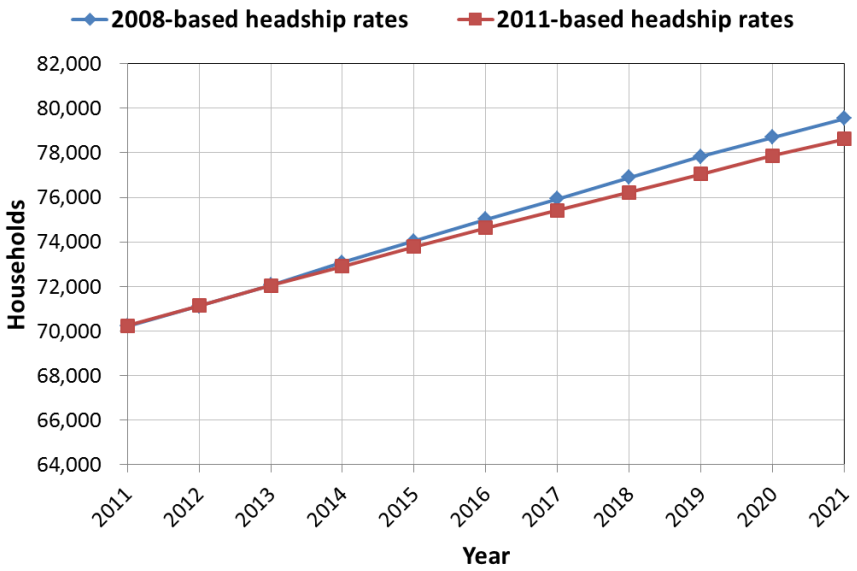
5.6 The new CLG household model provides an important update to the evidence base, with the general trend in the 2011-based projections suggesting a reduction in the rate of household growth from 2011-21, compared to previous projections.

5.7 Rates of household growth are determined by two factors: first, the profile and change in household headship rates by household type, age and sex; and second, the underlying rate of population growth.

5.8 The new CLG household model projections are underpinned by the interim 2011-based population projection (ONS). This projection uses 2011 Census statistics for its base period population, but uses assumptions from the 2010-based population projection to define its fertility, mortality and migration components of change. For this reason, the 2011-based population projections do not provide a suitably robust 'trend' projection of population growth.

5.9 In order to present an appropriate test of the 'sensitivity' of the new household headship rates upon future household growth, the ONS 2010-based sub-national population projection has been used in conjunction with 2008-based and 2011-based household headship rates. The population projection is scaled to match 2011 Census totals, following the 2010-based growth trend thereafter.

5.10 The impact of the 2011 headship rates is to reduce the scale of household growth over the 2011-21 period (Figure 7). Using the 2010-based population projection, scaled to the 2011 Census total, household numbers are projected to increase by just 11.9% using the 2011-based headship rates, compared to 13.3% with the 2008-based headship rates (Table 2).



Source: CLG; Edge Analytics. Using SNPP-2010 population projection

Figure 7: Impact of the 2011 headship rates on the scale of household growth (2011-21)

Table 2: Change in household numbers 2011-21 using 2008-based and 2011-based headship rates

	Households			Change 2011-2021	
	2011	2016	2021	Total	%
2008-based headship rates	70,212	75,007	79,548	9,336	13.3%
2011-based headship rates	70,233	74,632	78,619	8,386	11.9%

Source: CLG; Edge Analytics. Using SNPP-2010 population projection

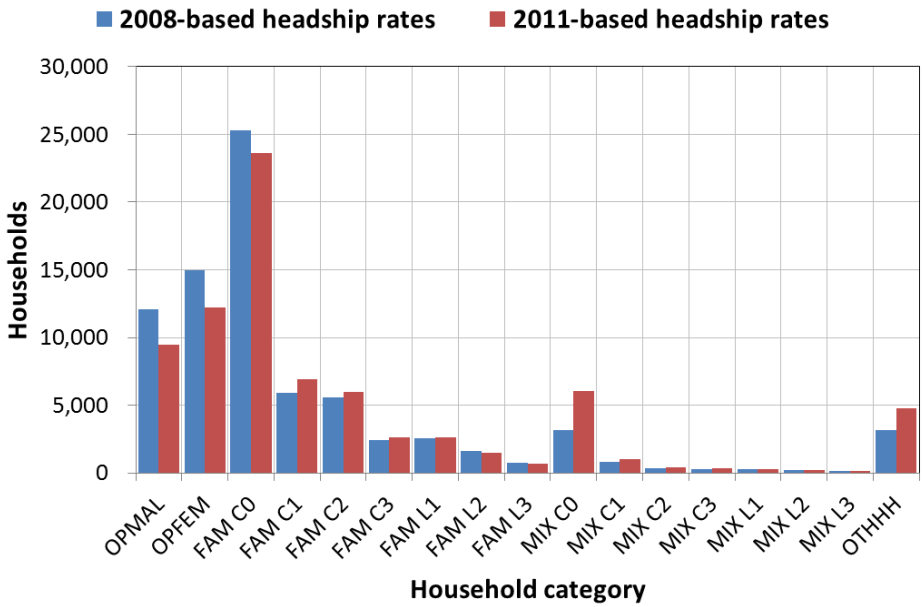
5.11 With a reduction in the projected rate of household formation, a higher average household size is maintained when applying the 2011-based headship rates; by 2021, the occupancy ratio in Basingstoke & Deane using the 2008-based headship rates is 2.30, compared to a ratio of 2.33 when using the 2011-based headship rates (Table 3).

Table 3: Change in household size 2011-21 using 2008-based and 2011-based headship rates

	Population / Household		
	2011	2016	2021
2008-based headship rates	2.38	2.34	2.30
2011-based headship rates	2.38	2.35	2.33

Source: CLG; Edge Analytics. Using SNPP-2010 population projection

5.12 The revised 2011-based headship rates have had the most significant impact upon single-person households (OPMAL, OPFEM) and family households with no children (FAMC0). This has been slightly offset by increases in households comprising a couple and one or more other adults with no dependent children (MIXC0) and the miscellaneous 'Other' classification (Figure 8).



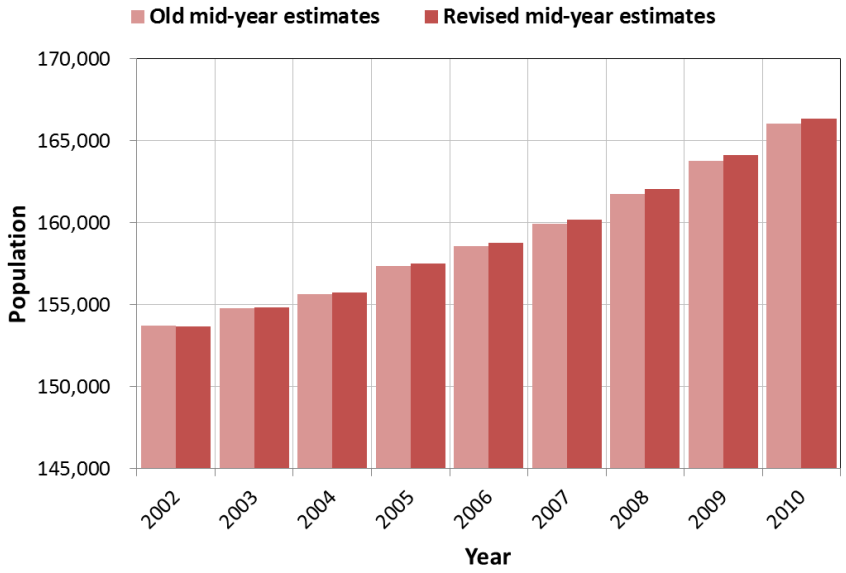
Source: CLG; Edge Analytics. Using SNPP-2010 population projection

Figure 8: Impact of the 2011 headship rates on the scale of household growth (2011-21)

Mid-year population estimates

5.13 In May 2013, ONS published a revised 'back-series' of mid-year population estimates, which align the 2002-10 populations with the latest 2011 data. These new data have recalibrated the 'components of change' to ensure the correct transition of the age profile of the population over the 2001-11 decade, taking into account births, deaths, internal migration and international migration.

5.14 For Basingstoke & Deane, the 2011 Census population statistics proved to be fairly consistent with previous mid-year estimates. For this reason the revised mid-year estimates deviate by only a small amount from the original data, slightly higher in the revisions (Figure 9).



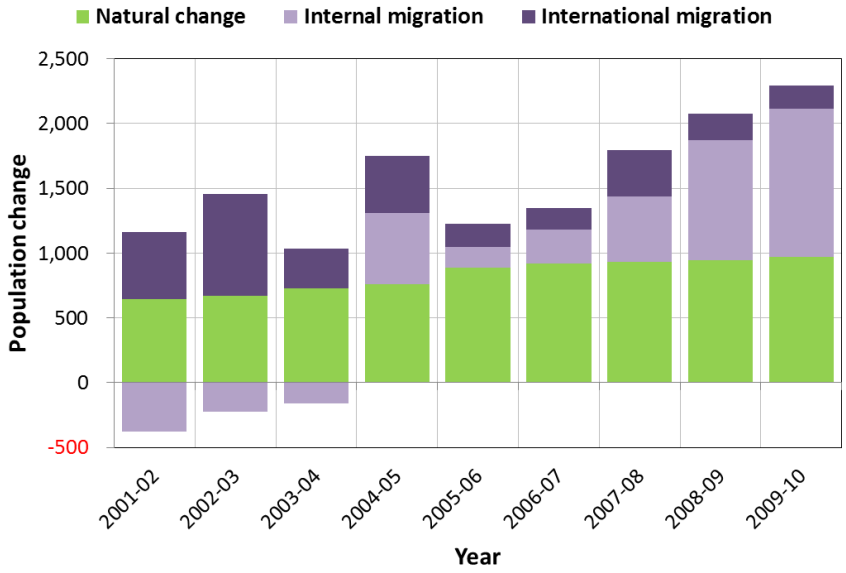
Source: ONS

Figure 9: Basingstoke & Deane – mid-year population estimate revisions

5.15 Between successive censuses, births and deaths are accurately recorded in vital statistics registers and provide the most robust measure of 'natural change' (the difference between births and deaths) in a geographical area. Internal migration data are derived from GP registers, providing an accurate representation of inter-area flows, albeit with some issues with regard to potential under-registration in certain age-groups (young males, in particular). International migration is the most difficult component to estimate with confidence.

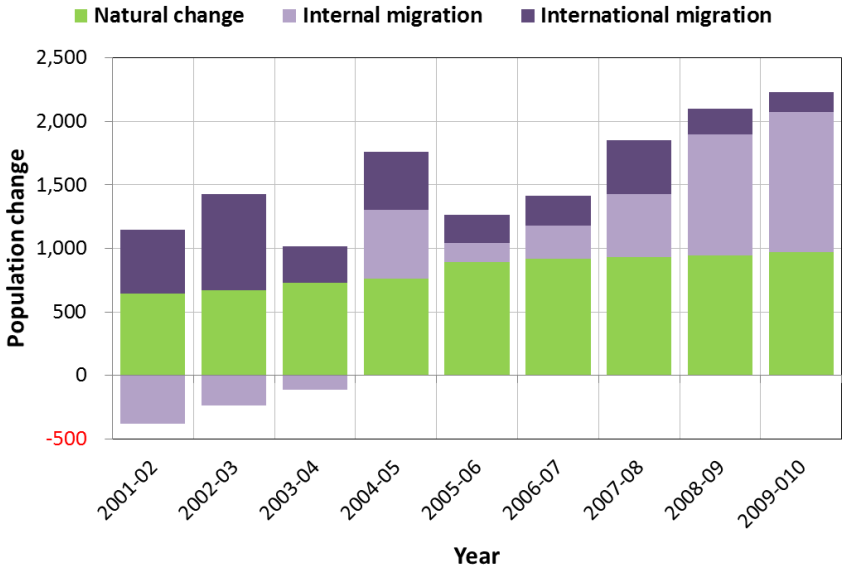
5.16 On the assumption that births, deaths and internal migration have been robustly measured (and that the 2001 Census provided a robust population count for Basingstoke & Deane), the 'adjustment' that resulted from the mid-year estimate revisions is predominantly associated with the mis-estimation of international migration; the balance between immigration and emigration flows to and from Basingstoke & Deane.

5.17 The components of change for the old and new mid-year estimates for Basingstoke & Deane remain relatively unchanged for the natural change and internal migration components. The international migration component is modified slightly with an overall net increase of approximately +278 applied over the 2002-10 period to account for under-estimation of population growth (Figure 10; Figure 11).



Source: ONS

Figure 10: Components of change – old mid-year estimates



Source: ONS

Figure 11: Components of change – new mid-year estimates

6. Scenario development

Scenario context

6.1 The NPPF (CLG, 2012a) provides guidance on the development of a robust evidence base to support the development of local housing plans. The guidance makes it clear that data inputs, assumptions and methodology should be robust and should consider future growth potential from a number of perspectives.

6.2 There is no single, definitive view on the likely level of growth expected in Basingstoke & Deane, with a mix of economic, demographic and national/local policy issues ultimately determining the speed and scale of change. For local planning purposes, it is necessary to evaluate a range of growth alternatives to establish the most 'appropriate' basis for determining future housing (and other service) provision.

6.3 The development of Local Plans is made considerably more challenging by the dynamic nature of key data inputs. Economic and demographic factors, coupled with the continuous release of new statistics, often undermine the robustness of underpinning evidence. This has been a particular issue during 2013, with the release of new 2011 Census statistics, updated household projections and revisions to historical population estimates.

6.4 Evidence presented in Local Plans is often challenged on the basis of the 'appropriateness' of the methodology that has been employed to develop growth forecasts. The use of a recognised forecasting product (POPGROUP), which incorporates an industry-standard methodology (cohort component model), removes this obstacle and enables a focus on assumptions and output, rather than methods.

6.5 Transparency is an important component of any forecasting analysis. It is necessary to ensure that all data inputs and assumptions are clearly documented and that outcomes are benchmarked against the latest 'official' forecasts, wherever possible.

6.6 The remainder of this section provides a summary of the alternative growth scenarios that have been tested for Basingstoke & Deane. These scenarios have been developed using POPGROUP technology; they use the latest available statistics from both ONS and CLG; they evaluate trend, policy and economic considerations; they are accompanied by a transparent definition of key

assumptions; and they are presented in a consistent format that contrasts the impact of scenario assumptions upon changes to population, households, dwellings, labour force and jobs. All scenarios are run from a 2011 base year, with a 2029 horizon. For context, historical data are included for 2001-10.

Official projections (ONS)

6.7 In all scenario analysis it is important to 'benchmark' any growth alternatives against the latest 'official' population projection. As mentioned in section 5, although ONS has released an 'interim' 2011-based population projection, it has used assumptions from the 2010-based population projection to define its fertility, mortality and migration components of change. For this reason, the 2011-based population projections do not provide a suitably robust benchmark trend projection.

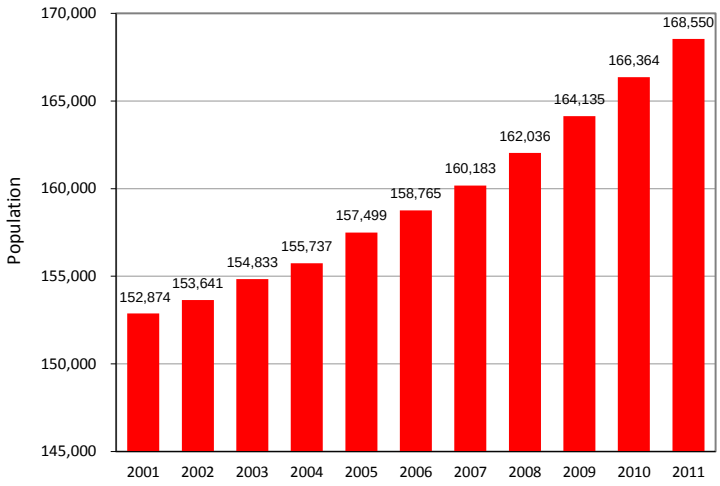
6.8 The 2010-based sub-national projection (SNPP-2010) from ONS is used in this analysis as the trend benchmark. This scenario has been developed using historical evidence from the period 2006-10 and incorporates long-term assumptions on fertility, mortality and international migration that were defined in the 2010-based *national* projection for England.

6.9 The SNPP-2010 scenario is scaled to ensure consistency with the 2011 Census population, following its designated growth trend thereafter.

Alternative trend scenarios

6.10 During 2012-13, ONS has released detailed statistics from the 2011 Census and has followed this with a release of the revised mid-year population estimates for 2002-10. These new data provide the basis for the derivation of a number of alternative 'trend' scenarios to complement the most recent official projection (SNPP-2010).

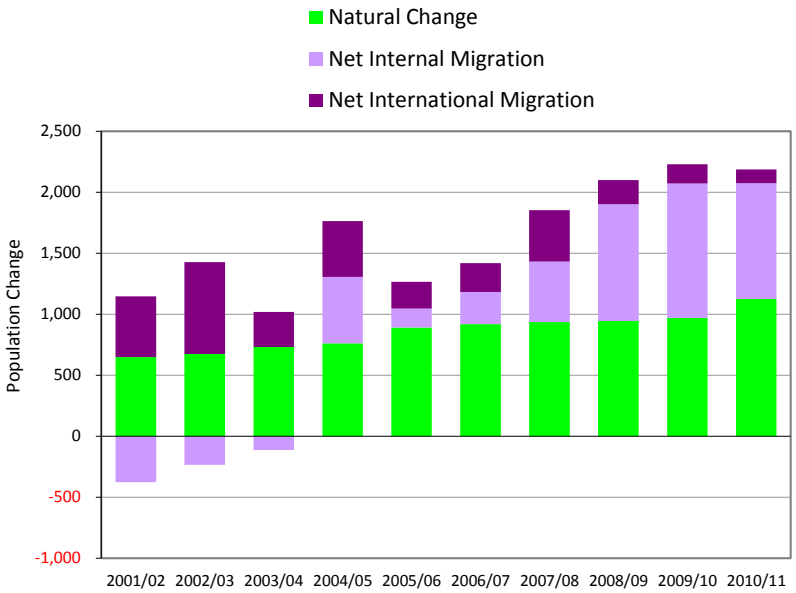
6.11 In determining the migration assumptions for a new '2011-based' trend projection, historical data on the components of demographic change during the 2001-11 time period are a key consideration. Since 2001, the population of Basingstoke & Deane has increased from 152,874 to reach 168,550 in 2011, a 10.3% change over the ten year period (Figure 12).



Source: ONS (2013)

Figure 12: Basingstoke & Deane, population change 2001-11

6.12 This population change has been driven by a mixture of: natural change (the difference between the number of births and deaths); net internal migration (the difference between in-migration and out-migration from and to other locations within the UK); and net international migration (the difference between immigration and emigration). There has been variation in the relative importance of these components over the 2001-11 decade (Figure 13).



Source: ONS (2013)

Figure 13: Basingstoke & Deane, components of population change 2001-11

6.13 A five year historical period is a typical time-frame from which migration 'trend' assumptions are derived (this is consistent with the ONS official methodology). However, given the unprecedented economic changes that have occurred since 2008, it is important to give due consideration to an extended historical time period for assumption derivation. In addition, the government has made its intentions on immigration control clear. The current ONS national long-term assumption of an annual +183,000 net increase due to international migration is high compared to current statistics (approximately +155,000) and government targets (< +100,000 per year). Taking due account of these differences is also an important consideration in the calculation of alternative trend assumptions.

6.14 A range of 'migration-led' scenario alternatives have been developed and tested, as follows:

- 'Mig-led5yrs': internal and international migration assumptions are based on the last five years of historical evidence.
- 'Mig-led10yrs': internal and international migration assumptions are based on the last 10 years of historical evidence.
- 'Mig-led10yrs-5yrs': internal migration assumptions are based on the last 10 years, international migration assumptions are based on the last five years of historical evidence.
- 'Mig-led10yrs-5yrs80%': internal migration assumptions are based on the last 10 years, international migration assumptions are based on the last five years but reduced to 80% in line with the difference between the current national estimate (+155,000) and the existing ONS long-term assumption (+183,000).
- 'NetNil': in-migration, out-migration, immigration and emigration are maintained, but the net migration balance is set at zero.

Dwelling-led scenarios

6.15 From previous analyses (BDBC, 2012a), Basingstoke & Deane Borough Council has established a 'range' of housing growth trajectories to inform the development of its Local Plan. These suggest a completion rate of 735-770 dwellings per year.

6.16 The impact of these dwelling growth targets can be evaluated against other scenario alternatives by running a 'dwelling-led' model, which uses in- and out-migration to balance the relationship between population size and housing provision.

6.17 The dwelling data have been used in the development of two further scenarios for the Borough, as follows:

- 'Dwellings735': population growth is constrained to a dwelling completion rate of 735 dwellings per year.
- 'Dwellings770': population growth is constrained to a dwelling completion rate of 770 dwellings per year.

Jobs-led scenario

6.18 The impact of an anticipated growth in employment can also be evaluated using a 'jobs-led' formulation of the model, which uses in- and out-migration to balance the relationship between the size of the labour force and the number of new jobs anticipated.

6.19 From previously published analysis (BDBC, 2012a) a potential jobs growth trajectory of +600 per year has been identified. This has been used in the development of a jobs-led scenario for the Borough, as follows:

- 'Employment 600': population growth is constrained to a jobs growth trajectory of 600 new jobs per year.

6.20 In modelling the potential impact of jobs growth upon demographic change, three key parameters are used: economic activity rates by age and sex; an unemployment rate for the Borough; and a commuting ratio for the Borough. Further detail on these assumptions is provided in section 3.

Household forecasts

6.21 Section 4 has provided a summary of the impact of the CLG's latest household projection model. Using evidence from the 2011 Census, this has introduced new 'headship rates', which determine the scale and profile of future household formation.

6.22 For the analysis presented here, three alternative headship rate assumptions are used, reflecting the uncertainty associated with future rates of household formation and accommodating the fact that the latest 2011-based data only run to 2021.

- A: CLG 2011-based headship rates, with the 2011-21 trend continued after 2021.
- B: CLG 2011-based headship rates, with the 2021 values fixed thereafter.
- C: CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter.

6.23 The household impact of the population growth scenarios is modelled using each of the three headship rate alternatives.

Scenario definition summary

6.24 To summarise, the following suite of scenarios was evaluated as part of this analysis:

Table 4: Scenario definition summary

	Household Headship Rates		
Scenario Type	**CLG 2011-trend**	**CLG 2011-fixed**	**CLG 2008**
Official	SNPP-2010_A	SNPP-2010_B	SNPP-2010_C
Trend	Mig-led5yrs_A Mig-led10yrs_A Mig-led10yrs-5yrs_A Mig-led10yrs-5yrs80%_A NetNil_A	Mig-led5yrs_B Mig-led10yrs_B Mig-led10yrs-5yrs_B Mig-led10yrs-5yrs80%_B NetNil_B	Mig-led5yrs_C Mig-led10yrs_C Mig-led10yrs-5yrs_C Mig-led10yrs-5yrs80%_C NetNil_C
Dwelling-led	Dwellings735_A Dwellings770_A	Dwellings735_B Dwellings770_B	Dwellings735_C Dwellings770_C
Jobs-led	Employment600_A	Employment600_B	Employment600_C

7. Scenario forecasts

Scenario summary

7.1 A summary of the results of each scenario is provided in the form of a chart and an accompanying table of statistics. The chart illustrates the trajectory of population change resulting from each scenario. The table summarises the change in population and household numbers from 2011-29 that result from each scenario. The scenarios are 'ranked' (high to low) according to the estimated level of population change throughout 2011-29. The table also shows the average annual net migration associated with the population change; plus the expected average annual dwelling and jobs growth based on the assumptions used in each scenario.

7.2 Scenario results are presented in three separate illustrations, each one relating to the application of different household headship rates:

Figure 14: (A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

Figure 15: (B) CLG 2011-based headship rates, with the 2021 values fixed thereafter

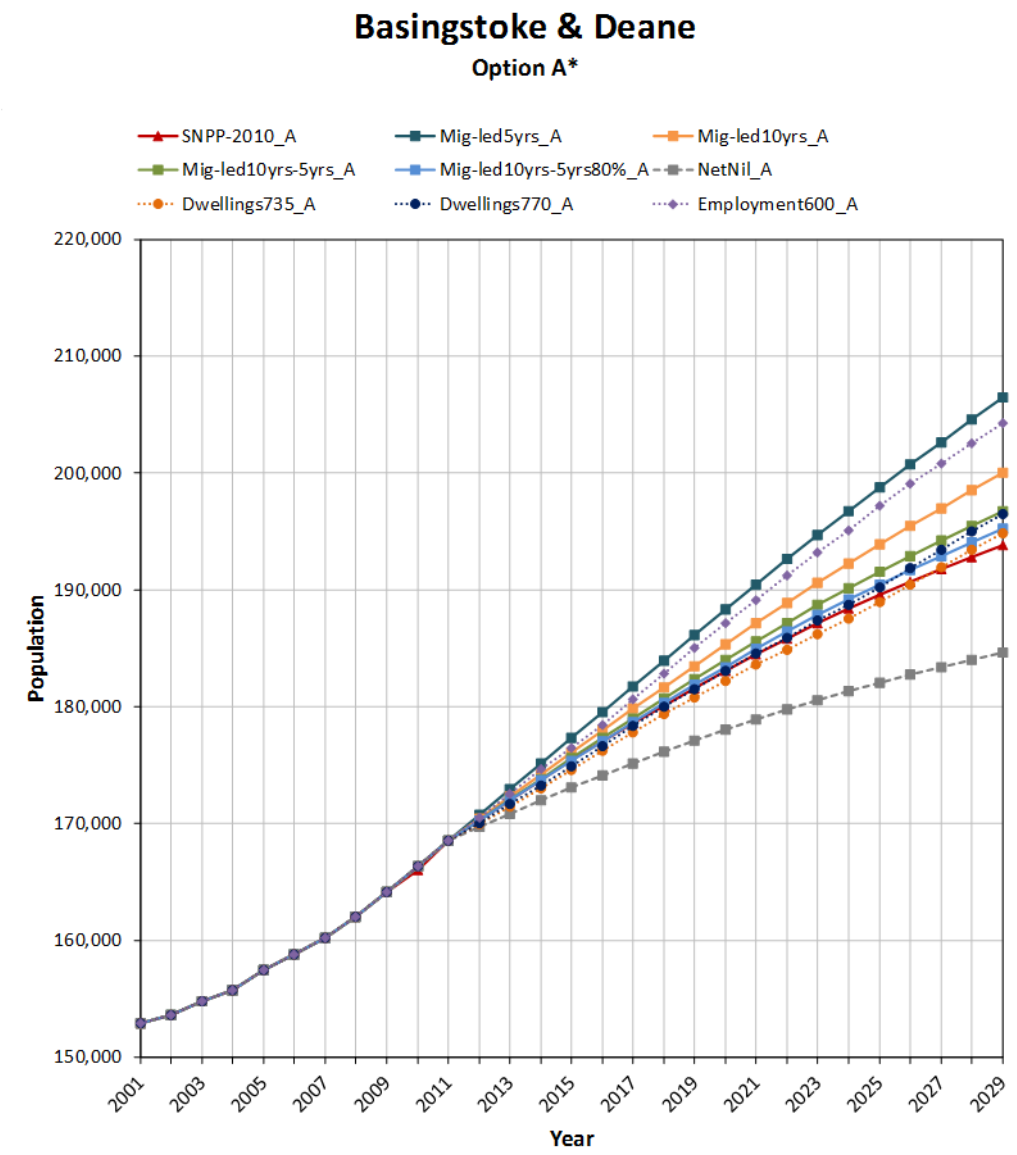
Figure 16: (C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

7.3 Each of these three sets of scenario alternatives is discussed in turn:

Scenario outcomes (A)

7.4 This first set of scenarios have been run using CLG's 2011-based household headship rates, trended after 2021. The scenario outcomes suggest a range of growth trajectories depending upon the key assumptions that have been applied. With the exception of the 'NetNil' scenario, population growth ranges from 15-22.5%, with estimated dwelling growth from 735-983 units per year (Figure 14).

7.5 All scenarios, with the exception of 'SNPP-2010', use the same historical data to generate a forecast. The SNPP-2010 projection was developed by ONS using the, now out-dated, mid-year estimates. It does not include any 2011 Census information, although the forecast presented here has rescaled the 2010 trajectory to the 2011 Census population total, continuing its trend thereafter.



Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_A	37,912	22.5%	17,297	24.8%	1,082	983	663
Employment600_A	35,722	21.2%	16,471	23.7%	980	936	600
Mig-led10yrs_A	31,457	18.7%	14,405	20.7%	739	819	496
Mig-led10yrs-5yrs_A	28,195	16.7%	13,379	19.2%	616	761	401
Dwellings770_A	27,919	16.6%	13,543	19.5%	617	770	375
Mig-led10yrs-5yrs80%_A	26,649	15.8%	13,152	18.9%	561	748	361
Dwellings735_A	26,280	15.6%	12,928	18.6%	540	735	328
SNPP-2010_A	25,251	15.0%	13,934	19.8%	561	792	360
NetNil_A	16,062	9.5%	9,668	13.9%	0	550	99

*(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

Figure 14: Basingstoke & Deane, scenario forecasts 2011-29 (A)

7.6 As it uses 'old' data, the age profile of the 'SNPP-2010' scenario will differ from that of the other scenarios (all of which are based on the latest mid-year estimates but more importantly on the 2011 Census single year population age profile for Basingstoke & Deane). This has important implications for the interpretation of scenario output.

7.7 The 'SNPP-2010' scenario suggests a 15% increase in population between 2011-29, which is below the growth estimates of the updated trend scenarios. However, the different age profile of the population results in a relatively high household growth (19.8%) and annual dwelling requirement (792 per year).

7.8 The 'NetNil' scenario suggests that, in the absence of migration, population growth would be approximately 9.5% between 2011-29, with a household growth of 13.9% and an annual dwelling requirement of 550 units per year. Jobs growth expectation, with a gradual 'ageing' of the resident population, is estimated at 99 per year over the projection period.

7.9 The highest growth trajectory is suggested by the 'Mig-led5yrs' scenario. The last five years have seen high net in-migration to Basingstoke & Deane from elsewhere in the UK. Recent international migration impacts are less dramatic, but the effect of five year trend assumptions for both internal and international migration is to continue this high migration growth throughout the projection period; averaging over +1,000 per year. Associated dwelling growth expectations are +983 units per year, jobs at +663 per year.

7.10 The employment-led projection ('Employment600') suggests growth below that of the 'Mig-led5yrs' scenario. This scenario assumes jobs growth of +600 per year, with no change in the (1.03) commuting balance, maintenance of the (5.6%) unemployment rate but a 10% rise in economic activity rates of the 50-74 year olds. On the basis of these assumptions, the annual net migration expectation is +980 per year.

7.11 Alternative 'trend' scenarios have been run to evaluate what might be considered to be more 'realistic' migration assumptions given the prevailing economic conditions of the last five years.

7.12 Taking a ten year history for the development of both internal and international migration assumptions (i.e. 'Mig-led10yrs') reduces estimated population growth to 18.7%, household growth to 20.7% and the annual dwelling requirement to 819 units per year.

7.13 Whilst an extended 10-year period is appropriate for internal migration, the international migration landscape changed in 2006 following EU expansion. For this reason, a five year history on the international migration assumptions may be more appropriate. The resulting 'Mig-

led10yrs-5yrs' scenario reduces estimated population growth to 16.7%, household growth to 19.2% and the annual dwelling requirement to 761 units per year. This dwelling total sits within the range of the two BDBC dwelling-led scenarios, which suggest 735-770 as the target for housing growth over the 2011-29 period. Jobs growth for these scenarios is estimated in the range 328-375 per year.

7.14 One final trend scenario ('Mig-led10yrs-5yrs80%') tests the potential sensitivity of population growth to the reduction in the impact of international migration. The current government is enforcing more stringent control of immigration and is seeking to reduce annual net immigration to below +100,000 per year.

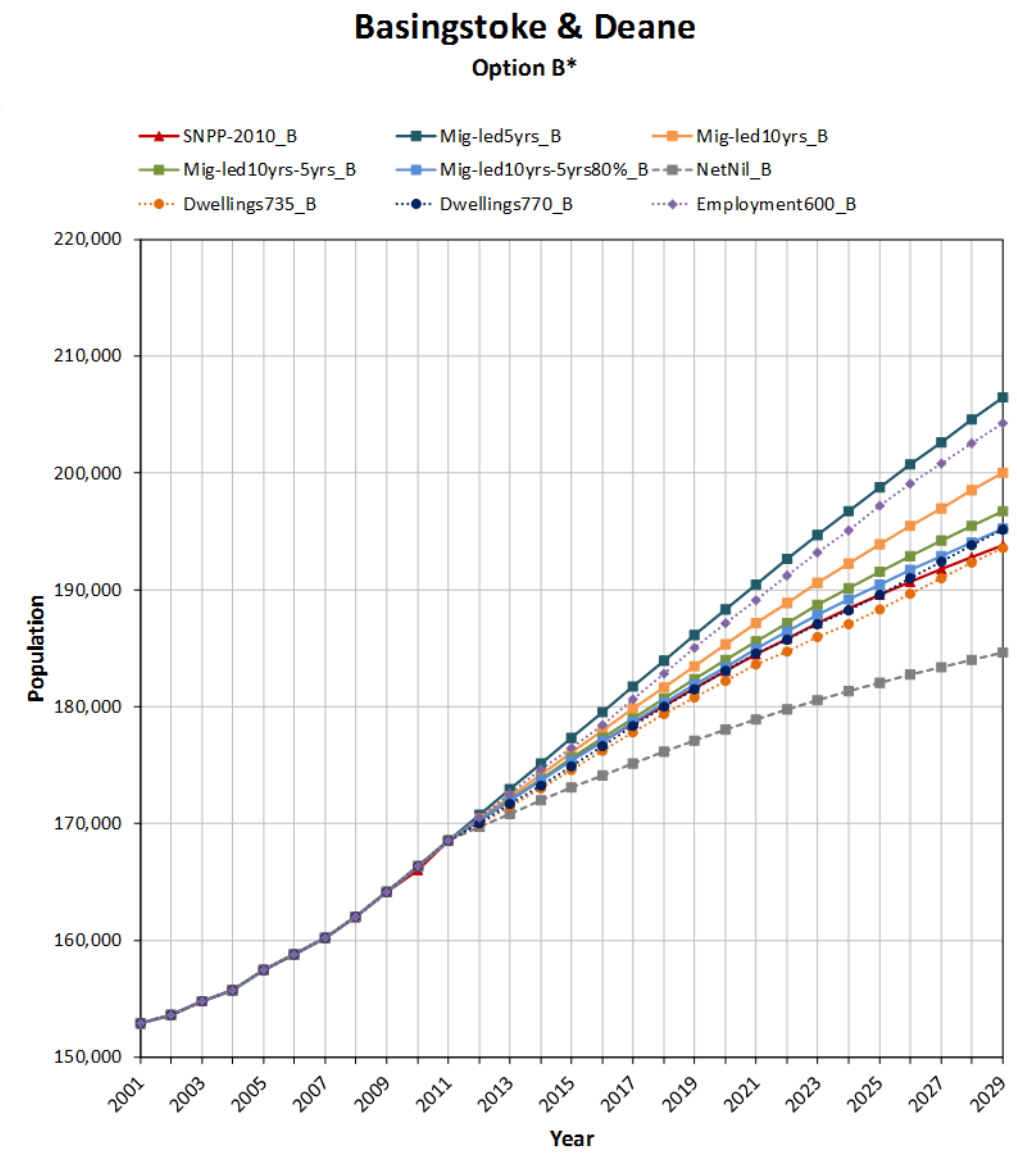
7.15 Despite the uncertain implication of the removal of restrictions upon the movement of Bulgarian and Romanian nationals to and from the UK, it is likely that immigration will continue to be an important policy focus of the government, resulting in a reduction in the annual net impact of international migrants (the balance between immigration and emigration).

7.16 To evaluate the likely impact upon Basingstoke & Deane, the five year international migration assumptions have been reduced to 80% of their total in line with the difference observed between ONS long-term assumptions and current evidence. This 'Mig-led10yrs-5yrs80%' scenario results in population growth of 15.8% during 2011-29, household growth of 18.9% and an annual dwelling requirement of 748 units per year.

Scenario outcomes (B)

7.17 The second set of scenarios have been run using CLG's 2011-based household headship rates, keeping them 'fixed' after 2021 for the remainder of the projection period (Figure 16).These scenarios generally result in marginally higher household growth and a higher annual dwelling requirement. This reflects a different trajectory of change in household headship rates, with no alteration in the age-sex headship rate profile after 2021.

7.18 Population growth is the same as for the (A) scenarios with the exception of the two dwelling-led scenarios. Headship rate differences between (A) and (B) affect the relationship between the '735' and '770' annual dwelling constraint and the population associated with this growth. Population growth is lower in the (B) scenario due to the headship rate trajectory resulting in a lower average household size; the same number of dwellings is associated with a smaller population size.



Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_B	37,912	22.5%	17,791	25.6%	1,082	1,011	663
Employment600_B	35,722	21.2%	16,965	24.4%	980	965	600
Mig-led10yrs_B	31,457	18.7%	14,877	21.4%	739	846	496
Mig-led10yrs-5yrs_B	28,195	16.7%	13,846	19.9%	616	787	401
Mig-led10yrs-5yrs80%_B	26,649	15.8%	13,608	19.5%	561	774	361
Dwellings770_B	26,636	15.8%	13,543	19.5%	551	770	336
SNPP-2010_B	25,251	15.0%	14,400	20.5%	561	819	360
Dwellings735_B	25,004	14.8%	12,928	18.6%	474	735	289
NetNil_B	16,062	9.5%	10,093	14.5%	0	574	99

*(B) CLG 2011-based headship rates, with the 2021 values fixed thereafter

Figure 15: Basingstoke & Deane, scenario forecasts 2011-29 (B)

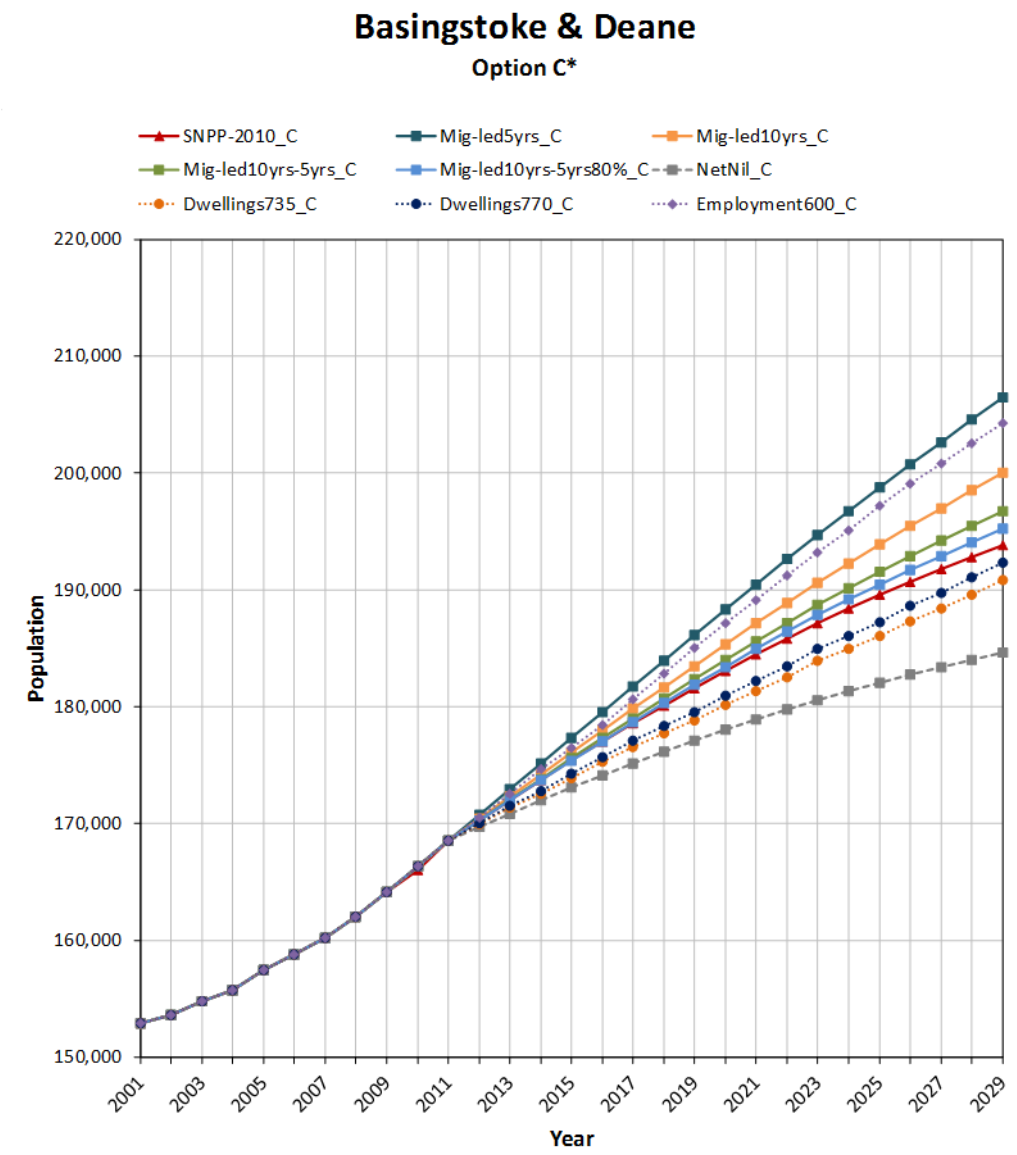
Scenario outcomes (C)

7.19 The final set of scenarios have been run using CLG's 2008-based household headship rates. The rates have been scaled to ensure that they reproduce the 2011 Census household totals but follow their original trend for the remainder of the projection period.

7.20 Section 5 provided context to the alternative use of 2011-based and 2008-based headship rates. The latter have higher rates of household formation for single-person and two-person-no-children households, resulting in a sharper decline in occupancy rates. This is reflected in the scenario outcomes that generate the highest household growth forecasts of the three A, B, C alternatives.

7.21 Headship rate differences again affect the relationship between the '735' and '770' annual dwelling constraint and the population growth associated with the dwelling-led scenarios. Population growth is lower in the (C) scenarios due to the headship rate trajectory resulting in a lower average household size; the same number of dwellings is associated with a smaller population size.

7.22 With a more significant reduction in average household occupancy, population growth associated with the dwelling-led scenarios reduces further to 14.1% ('Dwellings770') and 13.2% ('Dwellings735'). The same number of dwellings is accommodating a smaller population given the effect of the 2008-based headship rates.



Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_C	37,912	22.5%	19,073	27.4%	1,082	1,084	663
Employment600_C	35,722	21.2%	18,218	26.2%	980	1,036	600
Mig-led10yrs_C	31,457	18.7%	16,098	23.1%	739	915	496
Mig-led10yrs-5yrs_C	28,195	16.7%	14,998	21.5%	616	853	401
Mig-led10yrs-5yrs80%_C	26,649	15.8%	14,684	21.1%	561	835	361
SNPP-2010_C	25,251	15.0%	15,512	22.1%	561	882	360
Dwellings770_C	23,819	14.1%	13,543	19.5%	423	770	256
Dwellings735_C	22,254	13.2%	12,928	18.6%	349	735	211
NetNil_C	16,062	9.5%	11,145	16.0%	0	634	99

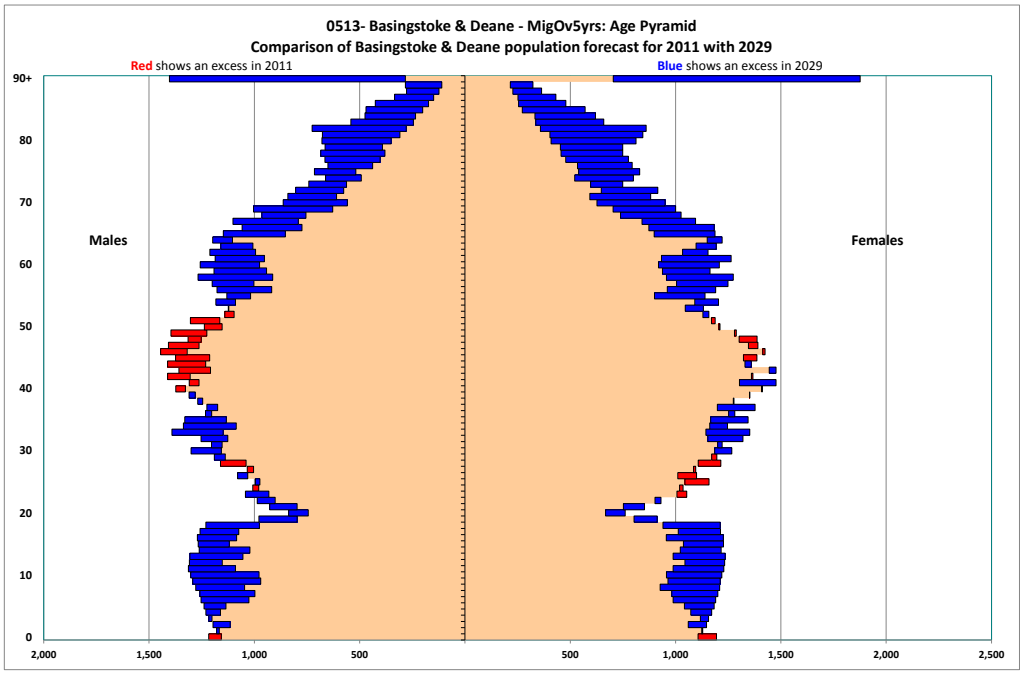
*(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

Figure 16: Basingstoke & Deane, scenario forecasts 2011-29 (C)

A changing age profile

7.23 Underpinning all of the growth scenarios are some fundamental changes to the age structure of Basingstoke & Deane's population. These changes affect the profile of household formation and the relative size of the Borough's labour force.

7.24 Using the 'Mig-led10Yrs-5Yrs' scenario as an example, Basingstoke & Deane's 2011 population is compared with its 2029 outcome. Over the projection period, births have been maintained at a level that is consistent with the latest historical data, giving a larger population aged 0-20. The size of the adult labour force ages is maintained over the 2011-29 period with a positive migration balance. What is most striking is the increase in the older age-groups, with the 'inevitable' process of population ageing producing a substantial increase in the old-age dependency balance for the Borough (Figure 17).



Red indicates a population higher in 2011 than 2029

Blue indicates a population higher in 2029 than 2011

Figure 17: Basingstoke & Deane scenario age profile 2011-29 (Mig-led10yrs-5yrs)

7.25 Whilst the number of 0-16 year-olds is maintained at a similar proportion of the total population in 2029, the 65+ age-group increases its share to 21%, from 15% in 2011. Overall, this results in a significant reduction in the relative size of the labour-force; 65% in 2011 but only 59% in 2029 (Figure 18).

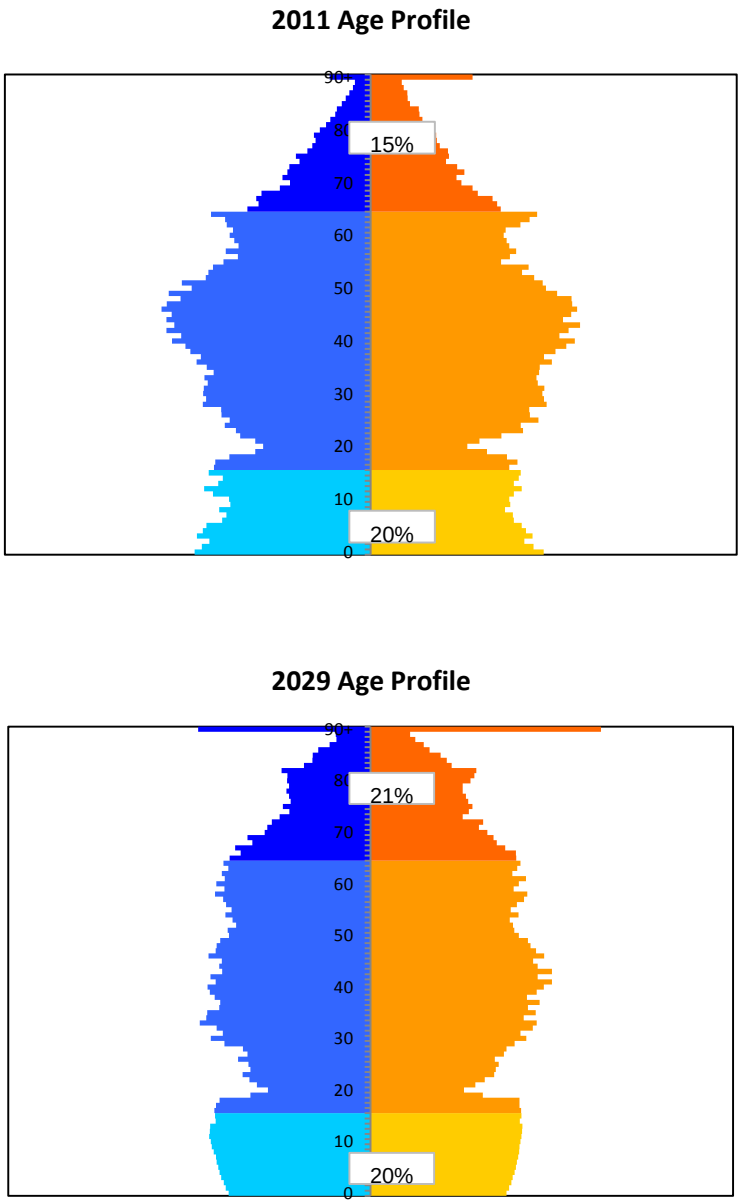


Figure 18: Basingstoke & Deane scenario age profile 2011-29 ('Mig-led10Yrs-5Yrs')

8. Summary & recommendations

Requirements summary

8.1 BDBC has sought to update its demographic evidence with the development of a suite of population, household and housing forecasts for Basingstoke & Deane. It was essential that these forecasts incorporated the latest evidence from:

- 2011 Census statistics on population and households
- Revised mid-year population estimates for the period 2002-10 (ONS)
- 2011-based household projections for 2011-21 (CLG)

8.2 This report has presented the suite of alternative growth scenarios using POPGROUP technology; the scenarios incorporate the latest available statistics from both ONS and CLG; they evaluate trend, policy and economic considerations; they are accompanied by a transparent definition of key assumptions; and they are presented in a consistent format that contrasts the impact of scenario assumptions upon changes to population, households, dwellings, labour force and jobs. All scenarios have been run from a 2011 base year, with a 2029 horizon; historical data has been included for 2001-10.

Scenario outcomes

8.3 The latest demographic evidence has provided a timely update to Basingstoke & Deane's population profile, aligning the new 2011 Census total with an historical time-series back to 2001. This has provided the basis for the development of alternative trend projections that consider the potential future impact of migration. Continuation of the most recent (five year) trends suggests substantial population and household growth over the next 20 years. Possibly more realistic assumptions (based on a ten year history of internal migration and a five year history of international migration) suggest lower growth, which is reduced further if consideration is given to a likely reduction in net immigration to the UK over the next 10-15 years.

8.4 The analysis of scenario outcomes is complicated by the 'choice' of appropriate headship rates with which household (and dwelling) growth is estimated. The latest 2011-based rates have been calibrated after a period of unprecedented economic change and stagnation in the housing

market and thus suggest a slower rate of household formation than the previous 2008-based rates, calibrated from data collected in a time period with very different market characteristics.

8.5 Deciding which is the most 'appropriate' trajectory of household growth is difficult. The 2011-based rates have been trended to 2029 for direct comparison with the 2008-based rates (the 'fixed' rate alternative may be too unrealistic and are ignored in this final comparison). Dwelling growth suggested by the 2011-based (A) scenarios is lower than the 2008-based (C) scenarios. An indication of the dwelling growth that would result if an 'average' of the two extremes were applied is provided (Table 5).

Table 5: Scenario dwelling growth summary

	Estimated dwellings per year 2011-29		
Scenario	**A**	**C**	***Average***
Mig-led5Yrs	983	1,084	*1,034*
Employment600	936	1,036	*986*
Mig-led10Yrs	819	915	*867*
SNPP-2010	792	882	*837*
Mig-led10Yrs-5Yrs	761	853	*807*
Mig-led10Yrs-5Yrs80%	748	835	*791*
Dwellings770	770	770	*770*
Dwellings735	735	735	*735*
NetNil	550	634	*592*

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021
(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

8.6 The alternative growth scenarios that the (A) and (C) options suggest, produce different occupancy outcomes, higher in the case of the 2011-based rates, lower for the 2008-based rates. Again, an average provides an indication of the balance between these two extremes (Table 6).

Table 6: Scenario household occupancy summary

Scenario	Household Occupancy Rates			
	2011	2029		
		A	C	*Average*
Mig-led5Yrs	2.40	2.35	2.30	*2.33*
Employment600	2.40	2.35	2.30	*2.33*
Mig-led10Yrs	2.40	2.36	2.31	*2.33*
SNPP-2010	2.38	2.28	2.24	*2.26*
Mig-led10Yrs-5Yrs	2.40	2.35	2.30	*2.32*
Mig-led10Yrs-5Yrs80%	2.40	2.33	2.29	*2.31*
Dwellings770	2.40	2.34	2.29	*2.31*
Dwellings735	2.40	2.34	2.29	*2.31*
NetNil	2.40	2.30	2.26	*2.28*

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

Recommendations

8.7 This analysis has not sought to provide a definitive view on Basingstoke & Deane's future housing requirement. Its objective has been to use the latest published statistics within a robust forecasting model, to produce a suite of alternative growth forecasts that combine demographic, economic and policy perspectives.

8.8 It is recommended that Basingstoke & Deane Borough Council considers this new evidence in the development of its Local Plan, giving particular consideration to assumptions which provide a longer-term historical perspective on internal migration and which recognise the uncertainty associated with the future impact of international migration.

8.9 With regard to household formation rates, Basingstoke & Deane Borough Council should consider the 'range' of outcomes suggested by the 2008-based and 2011-based headship rate scenarios, given that each of CLG's household models has been calibrated from data collected in very different housing market conditions.

8.10 Finally, Basingstoke & Deane Borough Council should recognise that important changes to its population age profile are inevitable, regardless of the future impact of migration. The population aged 65+ will increase in size and proportion over the next 20 years, with a consequent impact upon housing provision and public services.

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Glossary

Abbreviation	Definition
ASFR	Age-specific fertility rate
ASMigR	Age-specific migration rate
ASMR	Age-specific mortality rate
BDBC	Basingstoke & Deane Borough Council
CCSR	Centre for Census and Survey Research
CLG	Department for Communities and Local Government
LEP	Local Enterprise Partnership
LFS	Labour Force Survey
NPPF	National Planning Policy Framework
ONS	Office for National Statistics
PRDS	Patient Register Data Service
SMR	Standardised Mortality Ratio
SNPP	Subnational population projections
TFR	Total Fertility Rate

9. Addendum: additional scenario analysis

Objectives

9.1 Following representations received as a result of the pre-submission Local Plan consultation, BDBC has sought to extend its original scenario analysis to evaluate new data and assumptions.

9.2 The first aim of this additional analysis has been to use new statistics from the 2011 Census to update age-specific economic activity rates, testing each of the previous scenarios using these new data.

9.3 In testing these new data, BDBC has also sought to assess the impact of alternative unemployment rate assumptions upon scenario growth outcomes.

9.4 This addendum provides information on the derivation of the new economic activity rate statistics from the 2011 Census. The addendum also details the assumptions on unemployment that have been made to accompany the changes to the economic activity rates.

9.5 In the derivation of demographic forecasts for Basingstoke & Deane, the combination of economic activity rates, unemployment rate and commuting ratio determine the relationship between the resident population and the number of jobs available within the Borough.

9.6 The fixed commuting ratio (1.03) remains unchanged from previous analysis, but modifications to economic activity rates and the unemployment rate will result in the following impact:

- Changes to the population and household forecasts in the 'employment-led' scenario only, but no change to these data in all other scenarios
- Changes to the 'jobs' forecasts associated with each scenario, but no change to these data in the jobs-led scenario

9.7 A summary of results from each scenario is presented in this addendum whilst detailed scenario output has been provided separately.

New data and assumptions

Economic activity rates

9.8 Economic activity rates provide an indication of the size of the 'labour force' (people aged 16-74 that are both employed and unemployed). The original forecasting analysis for Basingstoke & Deane used data from the Annual Population Survey (APS), in combination with data from the 2001 Census to derive its economic activity rates. The APS data is only available for a relatively coarse set of age-groups. In addition, its data is subject to significant fluctuation year-on-year due to sampling size issues.

9.9 To derive the original economic activity rates, APS data was drawn from an extended period (2007-2011) to smooth out any sampling issues to provide an appropriate base-year profile of rates. The 2001 Census was used to derive an appropriate 16-74 profile for the economic activity rates (by 5-year age-group and sex) in preference to the aggregate age-groups provided by the APS. To account for an anticipated increase in older-age labour force participation, economic activity rates for all 50-74 age-groups were increased by 10% over the projection period.

9.10 Updated economic activity rate statistics from the 2011 Census have now been released, providing a more definitive view on the variation between age-sex groups in Basingstoke & Deane and enabling a direct comparison with data from the 2001 Census (Figure 19).

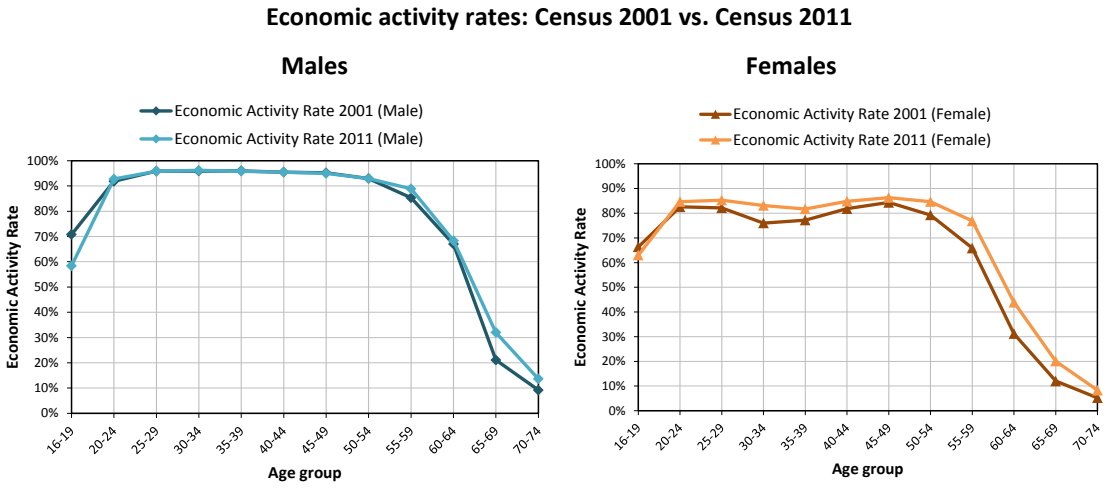


Figure 19: Economic activity rates for Basingstoke & Deane: Census 2001 vs. Census 2011

9.11 For males, the most notable feature is the increased economic activity rates of the older age-groups (65-74). For females, an increase is evident across almost all age-groups but particularly in

the 50-69 age-ranges.

9.12 For the additional scenario analysis presented in this addendum, the 2011 economic activity rates have been used as the basis for the evaluation of updated scenario forecasts. For both males and females, these result in higher rates of economic activity when compared to the rates used in the original Basingstoke & Deane scenario analysis (Figure 20).

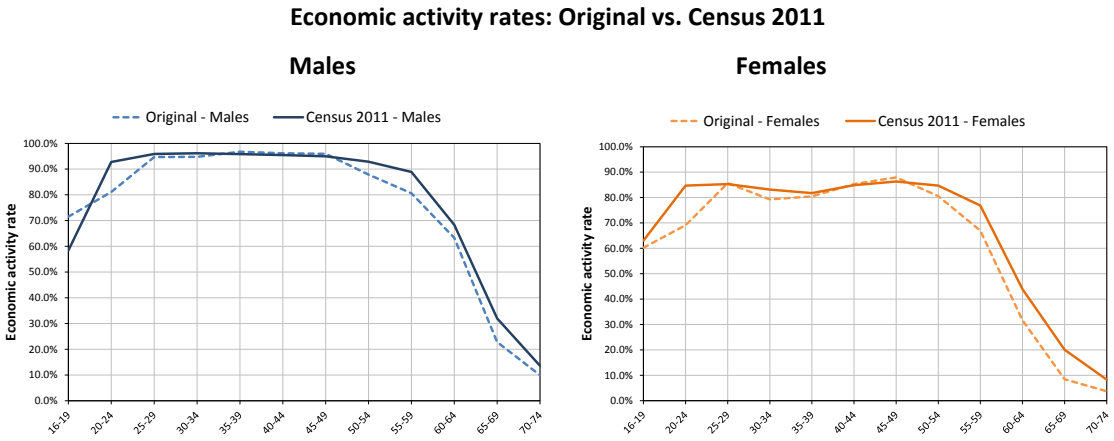


Figure 20: Economic activity rates for Basingstoke & Deane: original vs. Census 2011

9.13 Using the 2011 Census economic activity rates as a base, two variants have been chosen for use within the updated scenario analysis:

EA1: 2011 Census economic activity rates, fixed throughout the forecast period.

EA2: 2011 Census economic activity rates modified to take more explicit account of proposed changes to State Pension Age over the forecast period. These are relatively modest changes but result in the following modifications to the economic activity rates:

- Women aged 60-64: 40% increase by 2020, fixed thereafter
- Women aged 65-69: 20% increase by 2020, fixed thereafter
- Men aged 60-64: 5% increase by 2020, fixed thereafter
- Men aged 65-69: 10% increase by 2020, fixed thereafter

9.14 Results have been produced for all scenarios, using each of these economic activity rate variants.

Unemployment rate

9.15 In the evaluation of the jobs impact of different demographic scenarios, an unemployment rate is used in conjunction with the economic activity rates and the commuting ratio to model the relationship between the population, labour force and jobs.

9.16 In the previous scenario analysis, a fixed unemployment rate of 5.6% was used, based upon an average for the 2007-2012 period drawn from APS statistics.

9.17 For the new scenario analysis a base-year unemployment rate of 5.6% is retained but this is reduced to 4.6% by 2019 and remains fixed thereafter. The 4.6% target has been chosen as it is equivalent to the longer-term historical 9-year average unemployment rate (2004-2013) for Basingstoke & Deane.

9.18 This small reduction in the unemployment rate over time is designed to reflect a period of economic recovery. It has the effect of increasing the proportion of the Basingstoke & Deane resident labour force that is in employment.

9.19 Results have been produced for all scenarios using this unemployment rate assumption.

Household formation rates

9.20 Section 4 of the main report provided a summary of the impact of CLG's latest, 2011-based household projection model. Using evidence from the 2011 Census, this has introduced new household formation rates or 'headship rates', which determine the scale and profile of future household formation.

9.21 In the main report, three alternative headship rate assumptions were used (Option A, B and C), reflecting the uncertainty associated with future rates of household formation and accommodating the fact that the 2011-based data only run to 2021. For this additional scenario analysis, only Option A and Option C headship rates are used. These are defined as follows:

- Option A: CLG 2011-based headship rates, with the 2011-21 trend continued after 2021.
- Option C: CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter.

9.22 The household impact of each scenario is modelled using both headship rate alternatives.

Scenario summaries

9.23 The updated scenario outcomes are presented below (**Error! Reference source not found.** - Figure 24). All scenarios incorporate the updated assumptions on rates of economic activity rates and the unemployment rate.

9.24 A summary of the results of each scenario is provided in the form of a chart and an accompanying table of statistics. The chart illustrates the trajectory of population change resulting from each scenario. The table summarises the change in population and household numbers from 2011-2029 that result from each scenario.

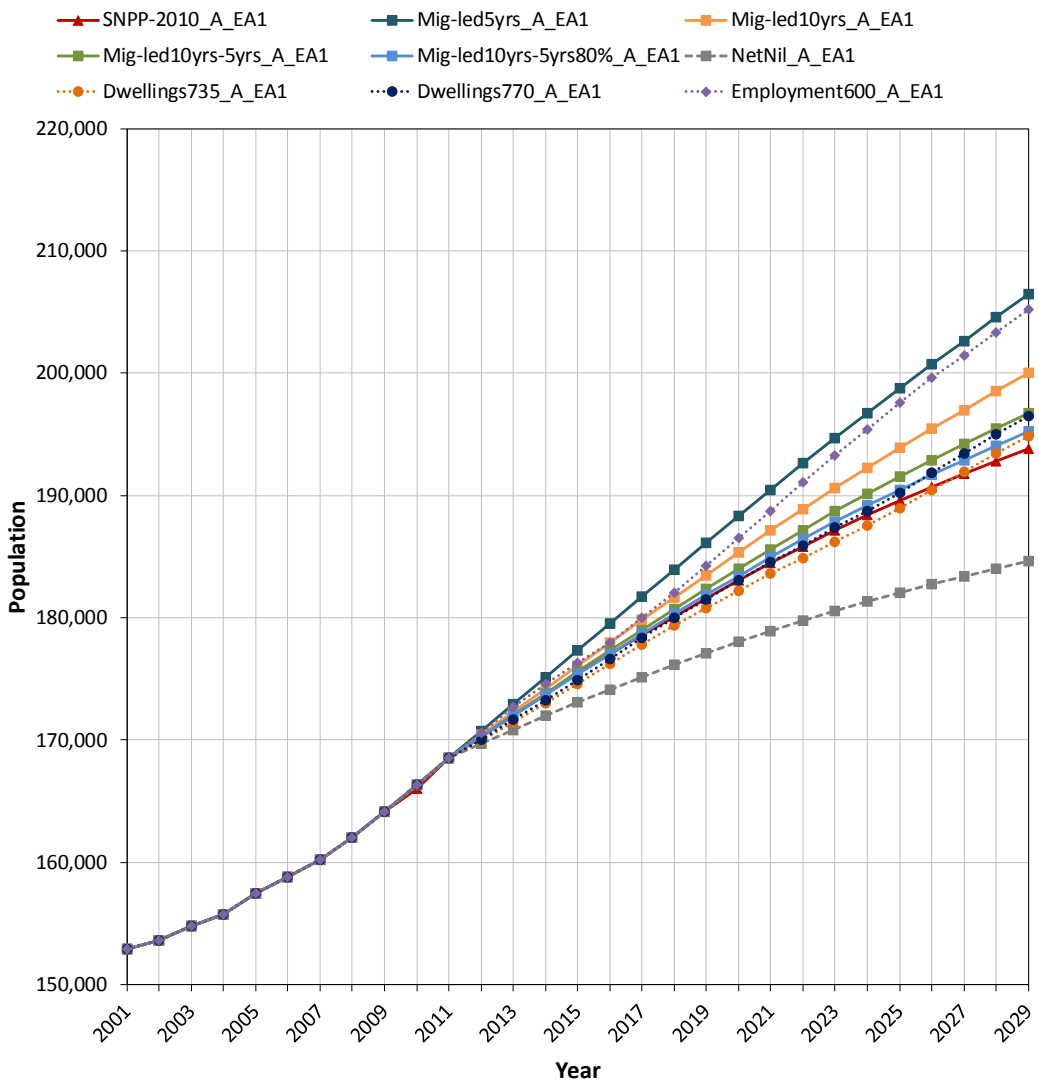
9.25 Within the tables, the scenarios are ranked according to the level of population change estimated over the forecast period. The tables also show the average annual net migration associated with this population change, plus the expected average annual dwelling and jobs growth based on the assumptions used in each scenario.

9.26 Scenario results are presented in four separate illustrations, each relating to the application of different household headship rates (Option A and Option C) in combination with different economic activity rates (EA1 and EA2). These are summarised below (Table 7).

Table 7: Scenario illustrations: headship rate and economic activity rate assumptions

Figure	Headship rates	Economic activity rates
Error! Reference source not found.	**Option A** *2011-based*	**EA1** *2011 Census - fixed*
Figure 22	**Option C** *2008-based*	**EA1** *2011 Census - fixed*
Figure 23	**Option A** *2011-based*	**EA2** *2011 Census with adjustment for SPA**
Figure 24	**Option C** *2008-based*	**EA2** *2011 Census with adjustment for SPA**

*State Pension Age

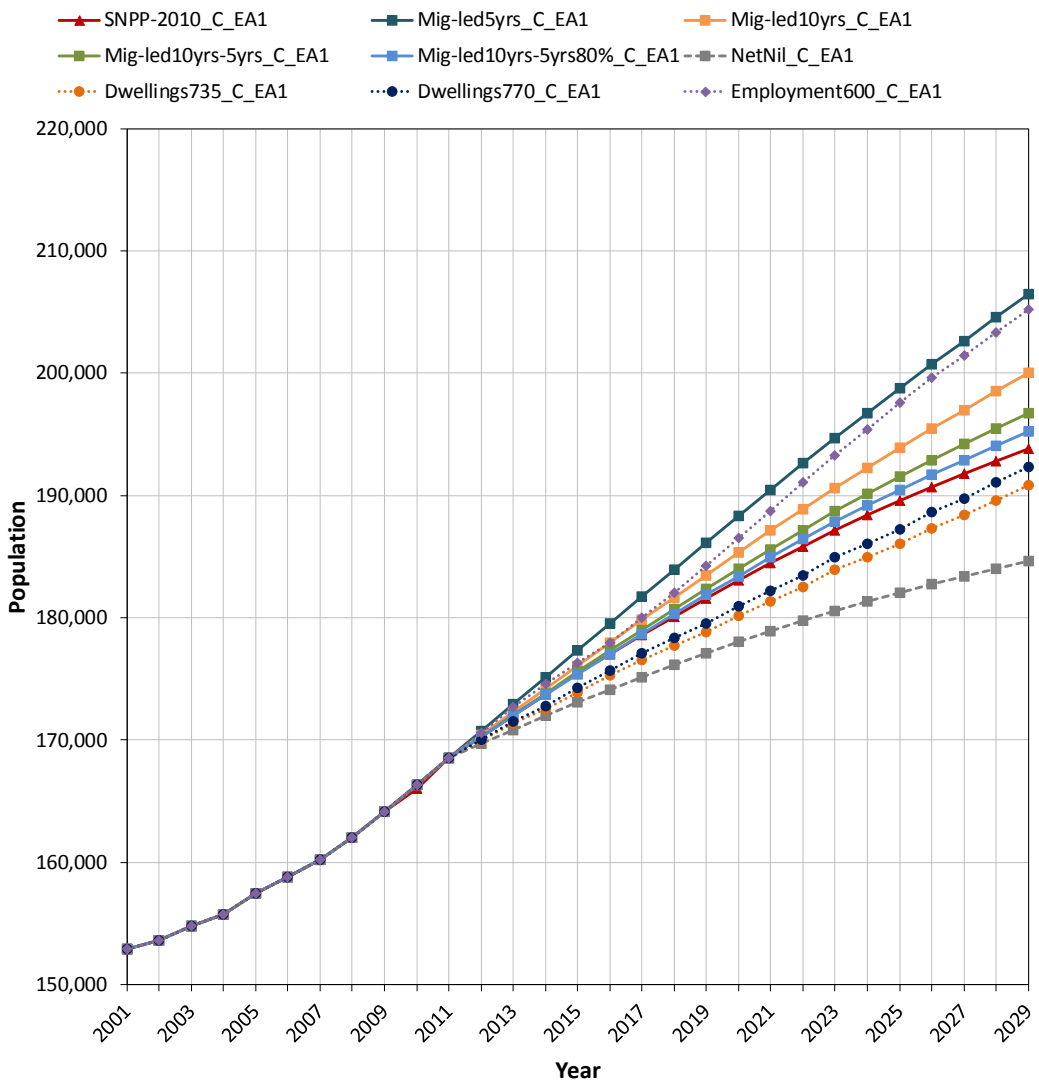


Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_A_EA1	37,912	22.5%	17,297	24.8%	1,082	983	633
Employment600_A_EA1	36,674	21.8%	16,815	24.2%	1,033	956	600
Mig-led10yrs_A_EA1	31,457	18.7%	14,405	20.7%	739	819	459
Mig-led10yrs-5yrs_A_EA1	28,195	16.7%	13,379	19.2%	616	761	361
Dwellings770_A_EA1	27,919	16.6%	13,543	19.5%	617	770	338
Mig-led10yrs-5yrs80%_A_EA1	26,649	15.8%	13,152	18.9%	561	748	320
Dwellings735_A_EA1	26,280	15.6%	12,928	18.6%	540	735	289
SNPP-2010_A_EA1	25,251	15.0%	13,934	19.8%	561	792	319
NetNil_A_EA1	16,062	9.5%	9,668	13.9%	0	550	46

* (A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

**(EA1) 2011 economic activity rates

Figure 21: Basingstoke & Deane, scenario forecasts 2011-29 (A_EA1)

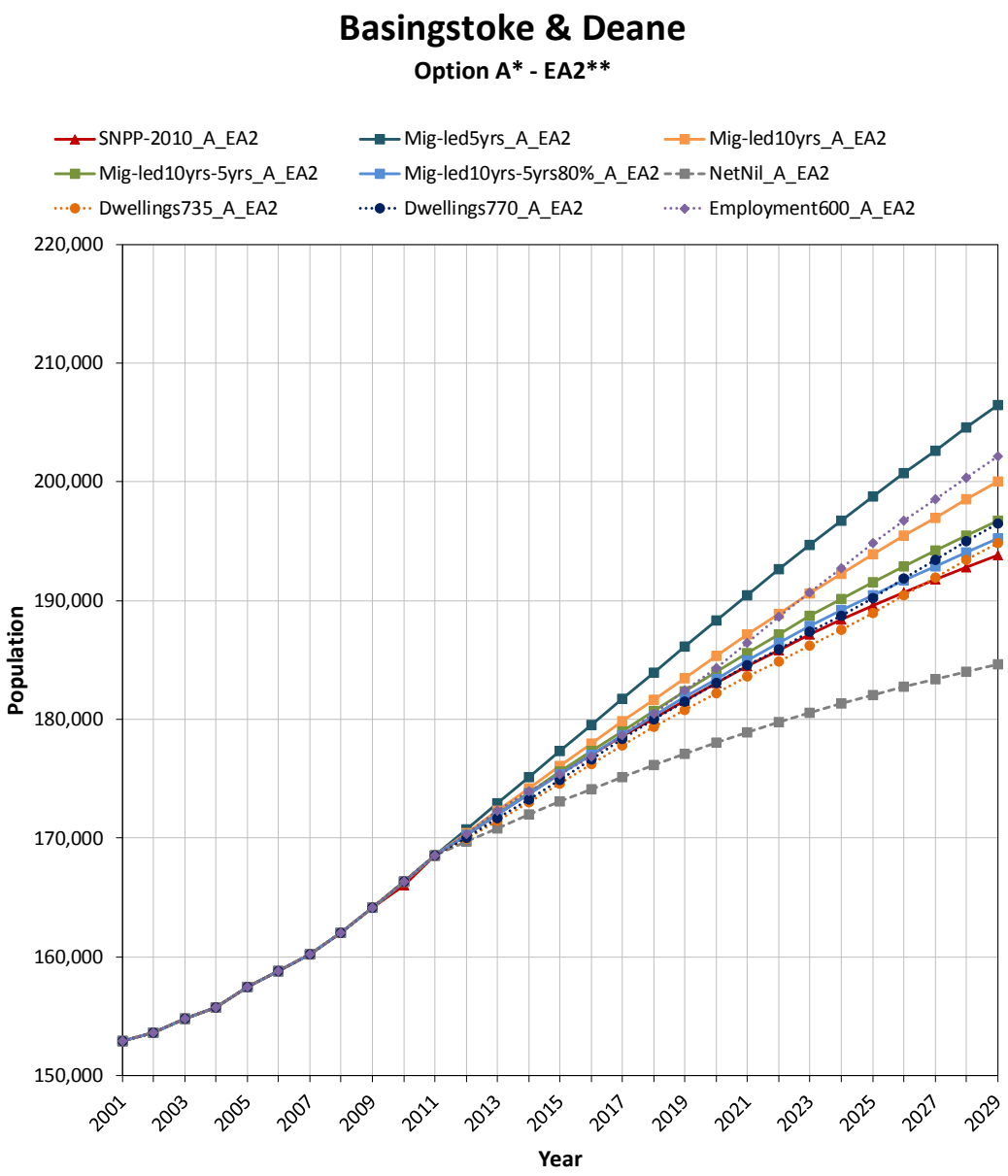


Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_C_EA1	37,912	22.5%	19,073	27.4%	1,082	1,084	633
Employment600_C_EA1	36,674	21.8%	18,604	26.7%	1,033	1,058	600
Mig-led10yrs_C_EA1	31,457	18.7%	16,098	23.1%	739	915	459
Mig-led10yrs-5yrs_C_EA1	28,195	16.7%	14,998	21.5%	616	853	361
Mig-led10yrs-5yrs80%_C_EA1	26,649	15.8%	14,684	21.1%	561	835	320
SNPP-2010_C_EA1	25,251	15.0%	15,512	22.1%	561	882	319
Dwellings770_C_EA1	23,819	14.1%	13,543	19.5%	423	770	215
Dwellings735_C_EA1	22,254	13.2%	12,928	18.6%	349	735	169
NetNil_C_EA1	16,062	9.5%	11,145	16.0%	0	634	46

*(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 census but following the original trend thereafter

**(EA1) 2011 economic activity rates

Figure 22: Basingstoke & Deane, scenario forecasts 2011-29 (C_EA1)

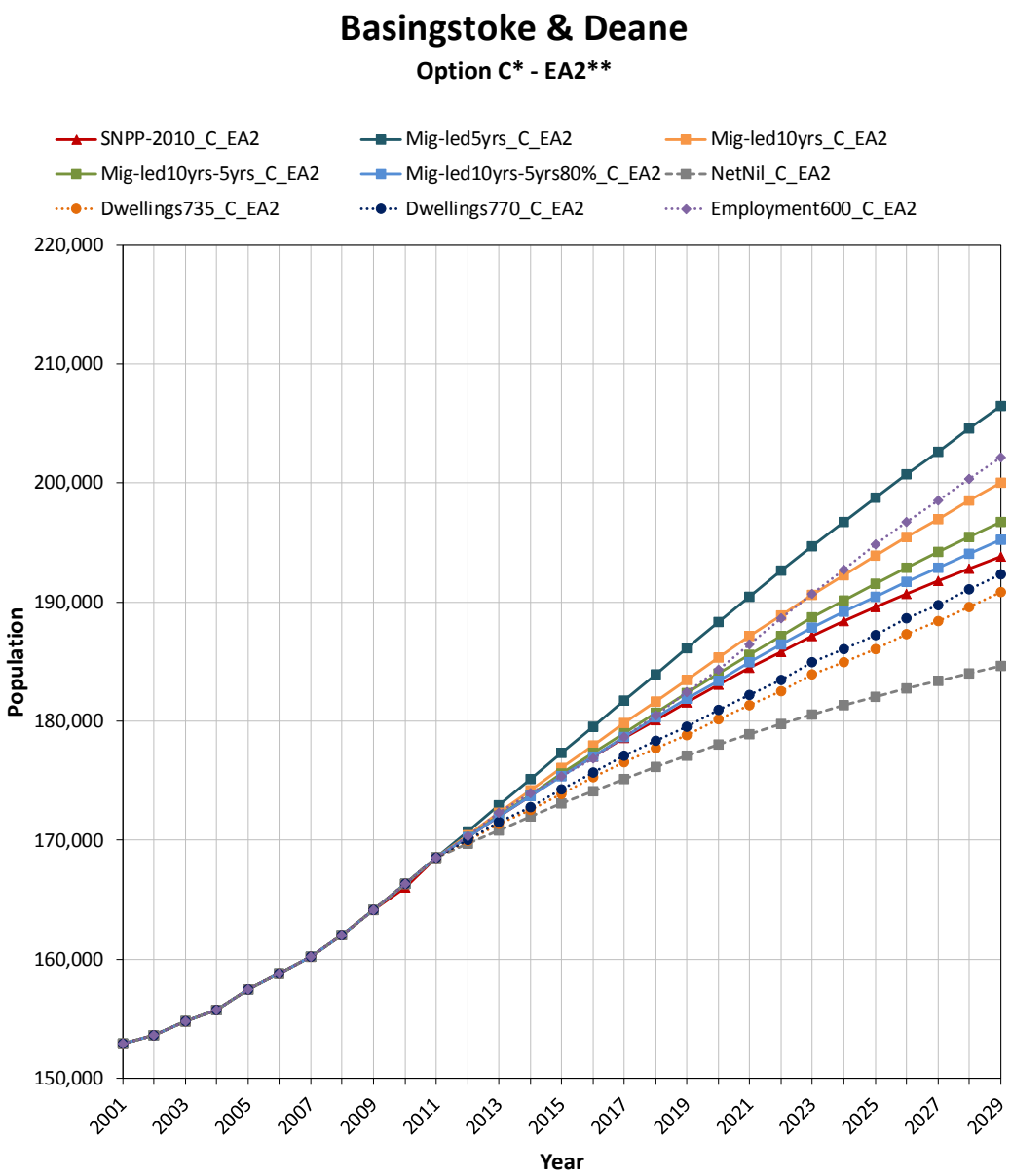


Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_A_EA2	37,912	22.5%	17,297	24.8%	1,082	983	723
Employment600_A_EA2	33,616	19.9%	15,662	22.5%	894	890	600
Mig-led10yrs_A_EA2	31,457	18.7%	14,405	20.7%	739	819	545
Mig-led10yrs-5yrs_A_EA2	28,195	16.7%	13,379	19.2%	616	761	446
Dwellings770_A_EA2	27,919	16.6%	13,543	19.5%	617	770	425
Mig-led10yrs-5yrs80%_A_EA2	26,649	15.8%	13,152	18.9%	561	748	406
Dwellings735_A_EA2	26,280	15.6%	12,928	18.6%	540	735	376
SNPP-2010_A_EA2	25,251	15.0%	13,934	19.8%	561	792	409
NetNil_A_EA2	16,062	9.5%	9,668	13.9%	0	550	131

*(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021

**(EA2) Economic activity rates accounting for anticipated changes to State Pension Age

Figure 23: Basingstoke & Deane, scenario forecasts 2011-29 (A_EA2)



Scenario	Change 2011 - 2029				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Mig-led5yrs_C_EA2	37,912	22.5%	19,073	27.4%	1,082	1,084	723
Employment600_C_EA2	33,616	19.9%	17,410	25.0%	894	990	600
Mig-led10yrs_C_EA2	31,457	18.7%	16,098	23.1%	739	915	545
Mig-led10yrs-5yrs_C_EA2	28,195	16.7%	14,998	21.5%	616	853	446
Mig-led10yrs-5yrs80%_C_EA2	26,649	15.8%	14,684	21.1%	561	835	406
SNPP-2010_C_EA2	25,251	15.0%	15,512	22.1%	561	882	409
Dwellings770_C_EA2	23,819	14.1%	13,543	19.5%	423	770	302
Dwellings735_C_EA2	22,254	13.2%	12,928	18.6%	349	735	255
NetNil_C_EA2	16,062	9.5%	11,145	16.0%	0	634	131

*(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 census but following the original trend thereafter

** (EA2) Economic activity rates accounting for anticipated changes to State Pension Age

Figure 24: Basingstoke & Deane, scenario forecasts 2011-29 (C_EA2)

Scenario comparison

9.27 To enable interpretation and comparison of scenario outcomes, the results of each of the 'original' scenarios is presented alongside the latest output. Summary tables are provided to illustrate the growth impact in terms of 'annual net migration', annual dwelling growth' and 'annual jobs growth' for each scenario.

9.28 In each table, results are presented for all scenarios based upon the application of different economic activity rates (original, EA1 and EA2) and different household formation rates (Option A and Option C).

9.29 The outcomes of the Option A (2011-based) and Option C (2008-based) household formation rate alternatives are summarised for each scenario together with an average of the two results.

9.30 The modifications that have been made to economic activity rates and the unemployment rate have only limited impact upon scenario outcomes. The key changes are as follows:

- Changes to the population and household forecasts in the 'employment-led' scenario only, but no change to these data in all other scenarios
- Changes to the 'jobs' forecasts associated with each scenario, but no change to these data in the jobs-led scenario

Net Migration

9.31 In terms of 'annual net migration', the revised economic activity rate and unemployment rate assumptions only have an impact upon the results of the 'Employment600' scenario. All other net migration outcomes remain unchanged (Table 8).

9.32 The 'Mig-led5yrs' scenario results in the highest annual net migration change of all scenarios (1,082 per year).

9.33 With regards to the 'Employment600' scenario, the migration impact is dampened when the EA2 rates are applied (894 per year), with a larger resident labour force reducing the requirement for additional in-migration to address the imbalance between residents and jobs.

Table 8: Basingstoke & Deane scenario summary - annual net migration

Scenario	Estimated net migration per year 2011-29								
	Economic activity rates - original			Economic activity rates - Census 2011 fixed (EA1)			Economic activity rates - Census 2011 with SPA uplift (EA2)		
	A	C	*Average*	A	C	*Average*	A	C	*Average*
Mig-led5yrs	1,082	1,082	***1,082***	1,082	1,082	***1,082***	1,082	1,082	***1,082***
Employment600	980	980	***980***	1,033	1,033	***1,033***	894	894	***894***
Mig-led10yrs	739	739	***739***	739	739	***739***	739	739	***739***
Mig-led10yrs-5yrs	616	616	***616***	616	616	***616***	616	616	***616***
SNPP-2010	561	561	***561***	561	561	***561***	561	561	***561***
Mig-led10yrs-5yrs80%	561	561	***561***	561	561	***561***	561	561	***561***
Dwellings770	617	423	***520***	617	423	***520***	617	423	***520***
Dwellings735	540	349	***444***	540	349	***444***	540	349	***444***
NetNil	0	0	***0***	0	0	***0***	0	0	***0***

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021
(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

Dwelling growth

9.34 In terms of 'annual dwelling growth', the revised economic activity rate and unemployment rate assumptions again only have an impact upon the results of the 'Employment600' scenario. All other net migration outcomes remain unchanged (Table 9).

9.35 The 'Mig-led5yrs' scenario results in the highest annual dwelling growth of all scenarios, an average of 1,034 per year.

9.36 For the 'Employment600' scenario, the original average dwelling growth of 986 per year increases to 1,007 per year when the EA1 rates are considered but falls to 940 per year with the EA2 rates that take account of SPA changes and maintain a larger resident labour force over the forecast period.

Table 9: Basingstoke & Deane scenario summary - annual dwelling growth

Scenario	Estimated dwellings per year 2011-29								
	Economic activity rates - original			Economic activity rates - Census 2011 fixed (EA1)			Economic activity rates - Census 2011 with SPA uplift (EA2)		
	A	C	*Average*	A	C	*Average*	A	C	*Average*
Mig-led5yrs	983	1,084	***1,034***	983	1,084	***1,034***	983	1,084	***1,034***
Employment600	936	1,036	***986***	956	1,058	***1,007***	890	990	***940***
Mig-led10yrs	819	915	***867***	819	915	***867***	819	915	***867***
SNPP-2010	792	882	***837***	792	882	***837***	792	882	***837***
Mig-led10yrs-5yrs	761	853	***807***	761	853	***807***	761	853	***807***
Mig-led10yrs-5yrs80%	748	835	***791***	748	835	***791***	748	835	***791***
Dwellings770	770	770	***770***	770	770	***770***	770	770	***770***
Dwellings735	735	735	***735***	735	735	***735***	735	735	***735***
NetNil	550	634	***592***	550	634	***592***	550	634	***592***

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021
(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter

Jobs growth

9.37 In terms of 'annual jobs growth', the revised economic activity rate and unemployment rate assumptions have an impact on all but the employment-led scenario (where jobs numbers are fixed by the employment forecast) (Table 10).

9.38 The general pattern is for a reduction in the annual jobs growth between the original scenarios and those which use the EA1 economic activity rates. When the EA2 rates are considered the increasing participation in the older age-groups results in a higher annual job growth total, with a larger resident labour force resulting from higher rates of economic participation.

Table 10: Basingstoke & Deane scenario summary - annual jobs growth

Scenario	Estimated jobs per year 2011-29								
	Economic activity rates - original			Economic activity rates - Census 2011 fixed (EA1)			Economic activity rates - Census 2011 with SPA uplift (EA2)		
	A	C	*Average*	A	C	*Average*	A	C	*Average*
Mig-led5yrs	663	663	***663***	633	633	***633***	723	723	***723***
Employment600	600	600	***600***	600	600	***600***	600	600	***600***
Mig-led10yrs	496	496	***496***	459	459	***459***	545	545	***545***
Mig-led10yrs-5yrs	401	401	***401***	361	361	***361***	446	446	***446***
Mig-led10yrs-5yrs80%	361	361	***361***	320	320	***320***	406	406	***406***
SNPP-2010	360	360	***360***	319	319	***319***	409	409	***409***
Dwellings770	375	256	***316***	338	215	***277***	425	302	***364***
Dwellings735	328	211	***269***	289	169	***229***	376	255	***316***
NetNil	99	99	***99***	46	46	***46***	131	131	***131***

(A) CLG 2011-based headship rates, with the 2011-21 trend continued after 2021
(C) CLG 2008-based headship rates, scaled to be consistent with the 2011 Census but following the original trend thereafter