

APPENDIX I

Table 1: Number of people in county and district areas by age group

		2001	2011	2013	2018	2026
Buckinghamshire	Total Population	479,024¹	506,550	516,096	536,454	561,708
	Age 0-19	122,973	127,043	129,404	133,472	140,494
	Age 20-64	286,376	294,564	294,878	298,990	296,529
	Age 65+	69,675	84,943	91,814	103,991	124,685
Aylesbury Vale	Total Population	165,760	174,880	181,071	194,212	209,754
	Age 0-19	43,975	44,323	45,837	48,452	52,652
	Age 20-64	100,487	104,249	106,140	111,062	112,647
	Age 65+	21,298	26,308	29,094	34,698	44,454
Chiltern	Total Population	89,237	92,652	93,250	94,398	96,217
	Age 0-19	22,155	23,351	23,444	23,637	24,226
	Age 20-64	52,048	51,188	50,360	49,633	47,832
	Age 65+	15,034	18,113	19,446	21,128	24,159
South Bucks	Total Population	61,937	67,060	67,941	68,645	70,119
	Age 0-19	14,955	15,845	16,046	16,178	16,559
	Age 20-64	36,139	38,139	37,919	37,115	35,577
	Age 65+	10,843	13,076	13,976	15,351	17,983
Wycombe	Total Population	162,106	171,958	173,834	179,199	185,619
	Age 0-19	41,898	43,524	44,077	45,206	47,057
	Age 20-64	97,701	100,988	100,459	101,180	100,473
	Age 65+	22,507	27,446	29,298	32,813	38,089

Source: 2001 Census, 2011 and 2013 ONS Mid-year population estimates, 2018 and 2026 Buckinghamshire County Council population projections (Dec 2014)

¹ NB the 2001 census data given for Buckinghamshire does not sum to the total for all Districts.

APPENDIX II: HOUSING ASSUMPTIONS

Table 2 shows how the housing figures have been sourced. AMR refers to the Annual Monitoring Reports prepared by each District Council. The latest available AMRs were used and were correct as at December 2014 although these figures are subject to change.

Table 2: Source of Housing Data 2013-2026

District	Years 2013/14-2017/18	Years 2018/19 – 2025/26
Aylesbury Vale	Current construction, planning consents & deliverable sites. <i>Source: AMR</i>	<p>2018/19 – 2020/21 Interim housing target* (1,018 per year) <i>Source: AMR</i></p> <p>2021-2026 assumed a continuation of previous AMR interim housing target (1,018 per year) as no housing target provided in the AMR for these years.</p> <p>*The interim target figure (1,018 per year) has been used instead of the projected completion figures from the AMR. The latter was more conservative (764 per year 2018/19, 590 per year 2019/20 and 540 per year 2020/21) which would cause a corresponding drop in the projected population. It was felt that the interim figures (1,018 per year) were more in line with the projected completions for the years 2013-2018 (see Table 3).</p>
Chiltern and South Bucks	Current construction, planning consents & deliverable sites. <i>Source: AMR</i>	<p>Uses an average housing figure based on 5 years of previous data (2013/14 - 2017/18). Chiltern (165 per year); South Bucks (134 per year).</p> <p>An average figure has been used purely to gain an indication of population change given this level of housing. The original published figures in the AMR drop after 2018 which would cause a corresponding drop in the projected population, so the figures are not based on planned housing numbers during this period. <i>Source AMR & BCC Research Team</i></p>

Wycombe	2013/14-2017/18 and 2018/19 anticipated completions on deliverable housing sites with year by year phasing. <i>Source: WDC Planning Team</i>	2019/20 – 2023/24 known sites that are anticipated to come forward in that period, with a total for the 5 year period spread evenly over the 5 years (i.e. 446 per year). 2024/5 – 2025/6 – a continuation of the completions levels for the previous 5 year period (i.e. 446 per year). <i>Source: WDC Planning Team</i>
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Table 3 shows the annual house build figures. Due to the uncertainty of house building in the long-term, it was recommended by Wycombe District Council to focus the projections on the next 5 years where house building is more predictable. To help address this, the report presents figures both to 2018 (first 5 years), and then from 2019 onwards.

Table 3: Annual Housing Assumptions Used in the Projections 2013-2026

District	Total Housing Stock 2012	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Aylesbury Vale	72,990	934	990	1,312	1,252	1,603	1,091	1,018	1,018	1,018	1,018	1,018	1,018	1,018	1,018
Chiltern	38,460	309	140	125	185	221	154	165	165	165	165	165	165	165	165
South Bucks	27,840	226	135	134	134	133	133	134	134	134	134	134	134	134	134
Wycombe	70,600	223	456	461	421	620	806	669	446	446	446	446	446	446	446
Buckinghamshire	209,890	1,692	1,721	2,032	1,992	2,577	2,184	1,986	1,763	1,763	1,763	1,763	1,763	1,763	1,763

- Figures were input from 2013-14 onwards. 2012/13 is actual housing completions but these figures were not used as the population was instead constrained by the most recent 2013 mid-year estimate population.

APPENDIX III

SUB-NATIONAL POPULATION PROJECTIONS

The BCC projections use standard assumptions around births, deaths and migration when projecting the future population.

The standard assumptions come from the officially published Sub-National Population Projections (SNPP) provided by the Office for National Statistics (ONS). The most recent 2012-based projections were released in May 2014.

The SNPP are trend based projections that use the most recent information (normally using the past 5 years of data) on population numbers and assumptions around factors that influence population change i.e. births, deaths and migration. The ONS projections do not factor in the impact of policy issues like housing or economic growth.

The SNPP start at 2012 (mid-year population estimate) and continue to 2037.

An overview of the key results from these projections and some of the assumptions used appears below.

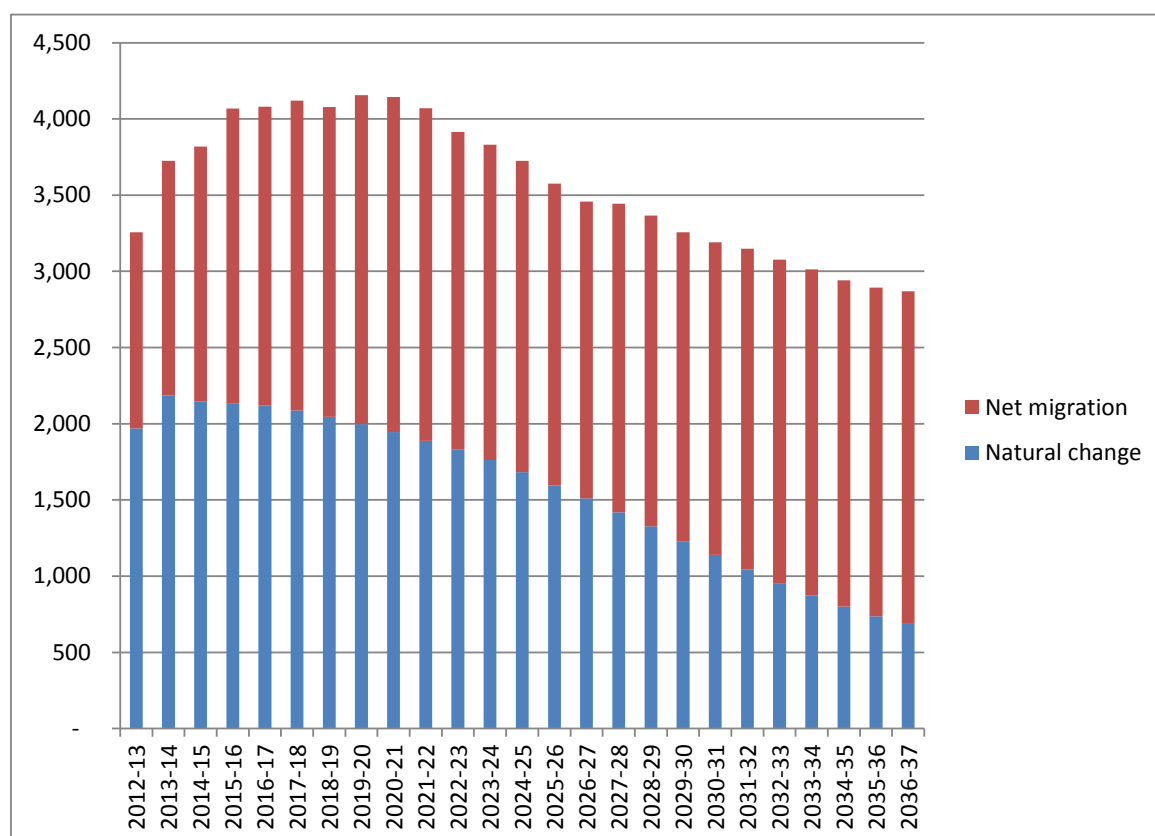
Overview of Results and Assumptions

- The population of Buckinghamshire will increase by 3,000-4,000 people per year.
- The proportion of children in the population is projected to remain stable to 2026, whilst the proportion of adults is expected to decline and the proportion of older people is projected to increase.
- Population growth is a result of a combination of 60% natural change (births minus deaths) and 40% migration at the beginning of the projection (2012). These figures are reversed as the projection progresses. By 2026 the population growth results from 56% migration and 44% natural change.
- Regarding natural change, the number of births remains fairly stable as fertility rates are predicted to remain constant at an average of 2.01 children per woman.
- The number of deaths is expected to increase over the course of the projection.
- Life expectancy is predicted to rise with people living longer.
- Migration from overseas is small contributing 13% on average to net migration with most (87% on average) of the migration coming from people moving into Buckinghamshire from other parts of the UK (2012-2026).
- There are differences by district which is explained in more detail later in this document.

Population Change

- Around 3,000-4,000 people are forecast to be added to the population each year.
- The population is forecast to grow each year but at a decreasing rate after 2020 (Chart 1).
- The annual growth is driven by a combination of natural population change (births minus deaths) and net migration (people moving into the county minus people moving out of the county).
- The annual population growth is comprised of 60% natural growth and 40% migration at the beginning of the projection. Gradually the proportion of population growth through natural change declines and net migration becomes the more dominant contributor to population growth.

Chart 1: Annual Population Growth - Buckinghamshire



- The population is projected to grow from 511,500 in 2012 to 566,000 by 2026, an increase of 11% from 2012.
- The proportion of children in the population is projected to remain stable to 2026, whilst the proportion of adults is expected to decline and the proportion of older people is projected to increase.

Future Births Trends

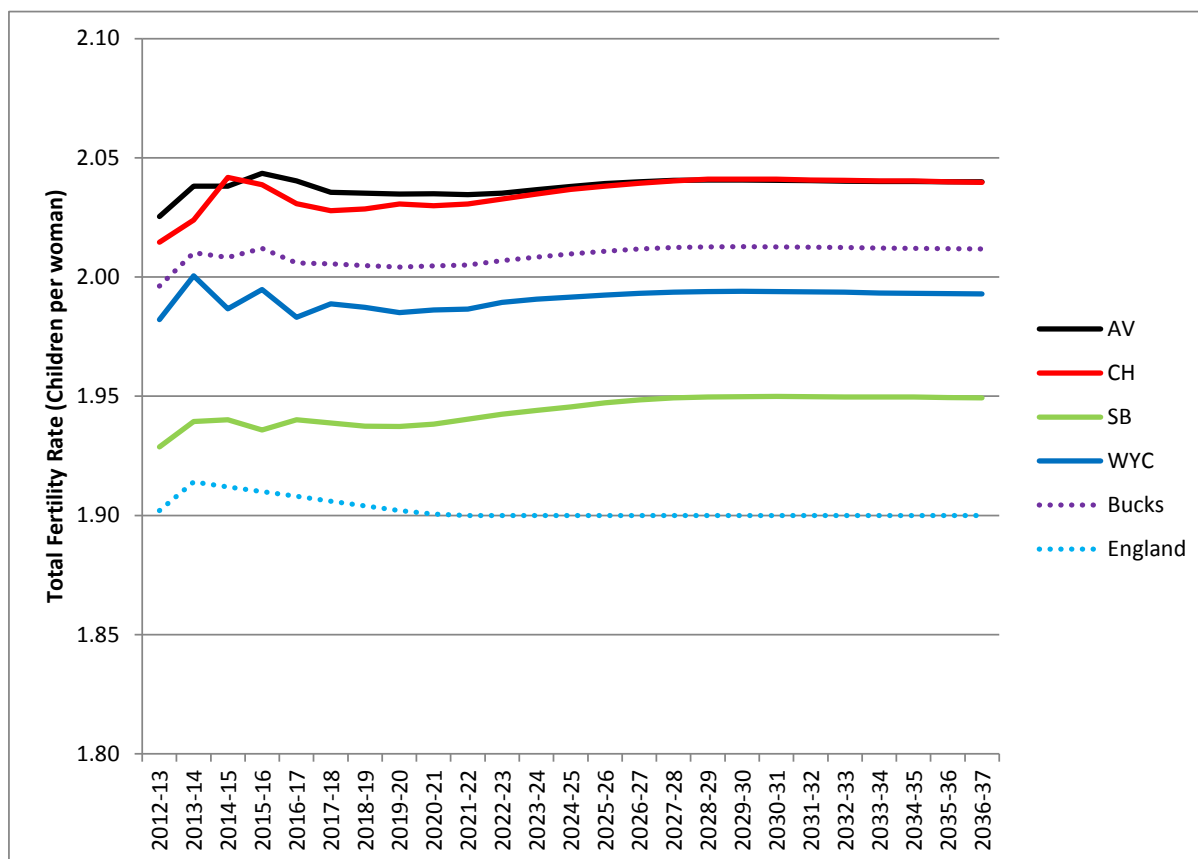
- The birth rate (total fertility rate) remains at or around 2.01 children per women during the course of the projection (Chart 2).
- Aylesbury Vale and Chiltern have the highest fertility rates followed by Wycombe and South Bucks (Table 1).
- The average of total fertility rates for years 2012-2026 in Buckinghamshire (2.01) is higher than the average for England (1.90).

Table 1: Total Fertility Rate* (Average of 2012-2026 Rates)

	Total Fertility Rate
Aylesbury Vale	2.04
Chiltern	2.03
South Bucks	1.94
Wycombe	1.99
Buckinghamshire	2.01
England	1.90

* TFR is the number of children born to a woman throughout her lifetime

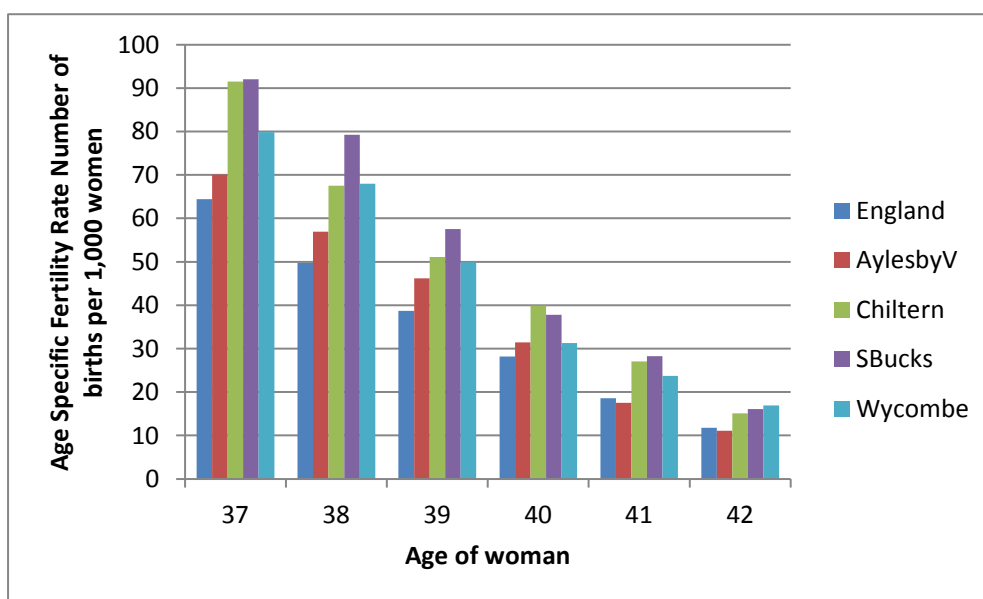
Chart 2: Total Fertility Rate (TFR*) by District



*TFR is the number of children born to a woman throughout her lifetime

- In Buckinghamshire, the ages at which most women have children i.e. the ages at which the fertility rates are highest² are 26- 36 years. This is similar although more extended than the ages for England (27-34 years).
- In Chiltern the age range in which women mainly start having children is slightly later starting at 29 years.
- In Buckinghamshire the fertility rate is higher than the national average for women in their late 30s and early 40s. This is especially true in Chiltern and South Bucks (Chart 3).
- Over the course of the projection the assumption is that the trend of women having children later in life (aged 30+) will continue and will steadily increase, whilst the fertility rate of women under 30 years is set to decline. This trend is also assumed at a national level.

Chart 3: 2013/14* Comparison of Fertility Rates in Women Aged 37-42 Years



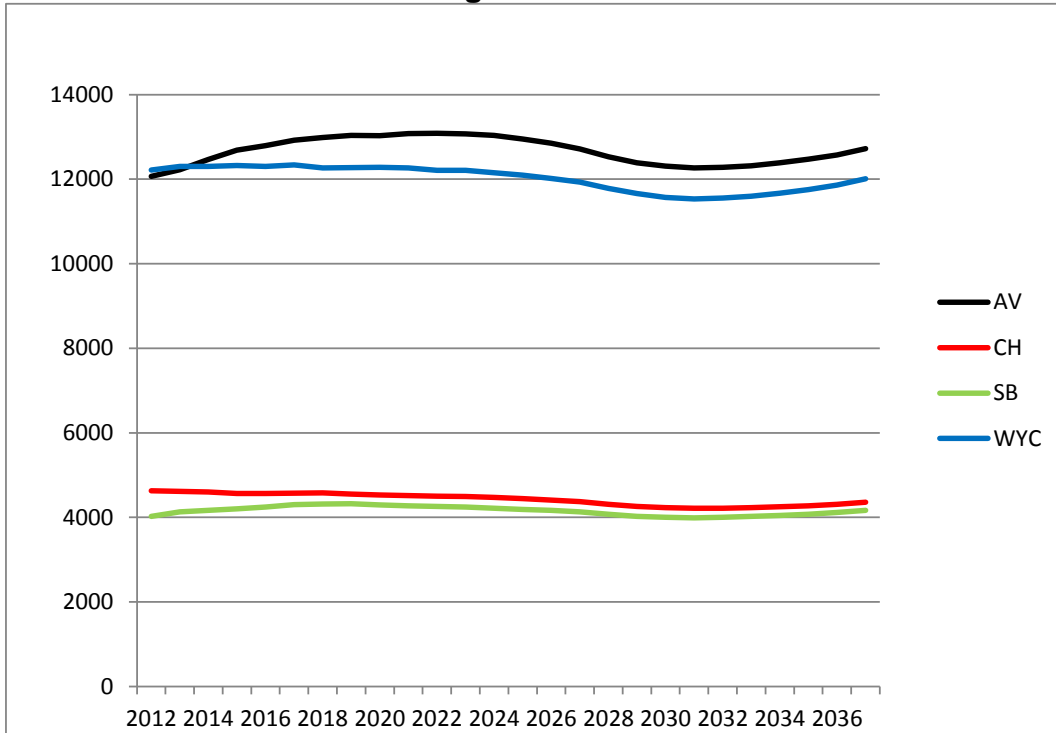
*2013/14 is the base year for fertility rates in the standard projections

- The number of women of childbearing age has a direct impact on the number of births.
- Chart 4 shows the number of women aged 26-36³ years during the course of the projection.

² This assumes an age specific fertility rate of over 100 births per 1,000 women.

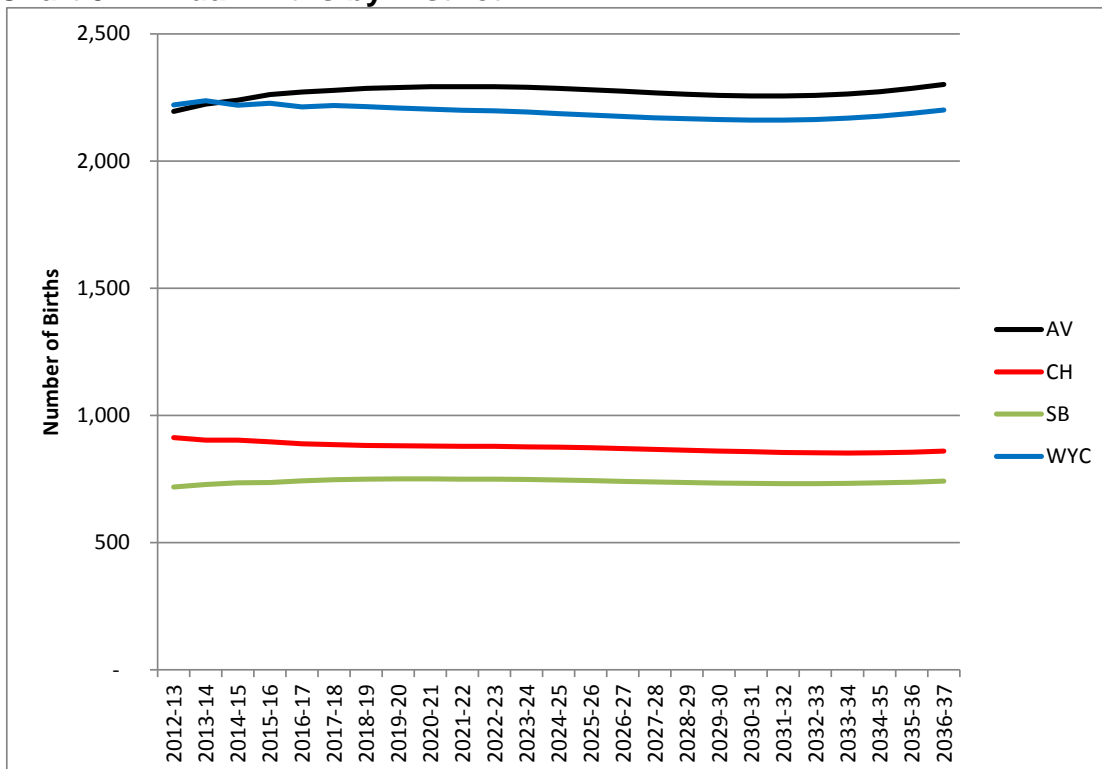
³ The projections model examines women of child-bearing age (15-44 years) but 26-36 years are the most common ages for women having children in Buckinghamshire (i.e. over 100 births per 1,000 women)

Chart 4: Number of Females Aged 26-36 Years



- Chart 5 shows the total number of births per year and because the total fertility rate remains almost constant during the course of the projection, the shape of Chart 5 is affected predominantly by the number of women aged 26-36 years.
- Chart 5 (births) is therefore similar to the shape of Chart 4 (women).

Chart 5: Annual Births by District



- Over 6,000 babies are born in Buckinghamshire each year and this trend is assumed to continue during the course of the projection.
- The largest number of births occurs in Aylesbury Vale and Wycombe given their larger populations of women (Table 2).

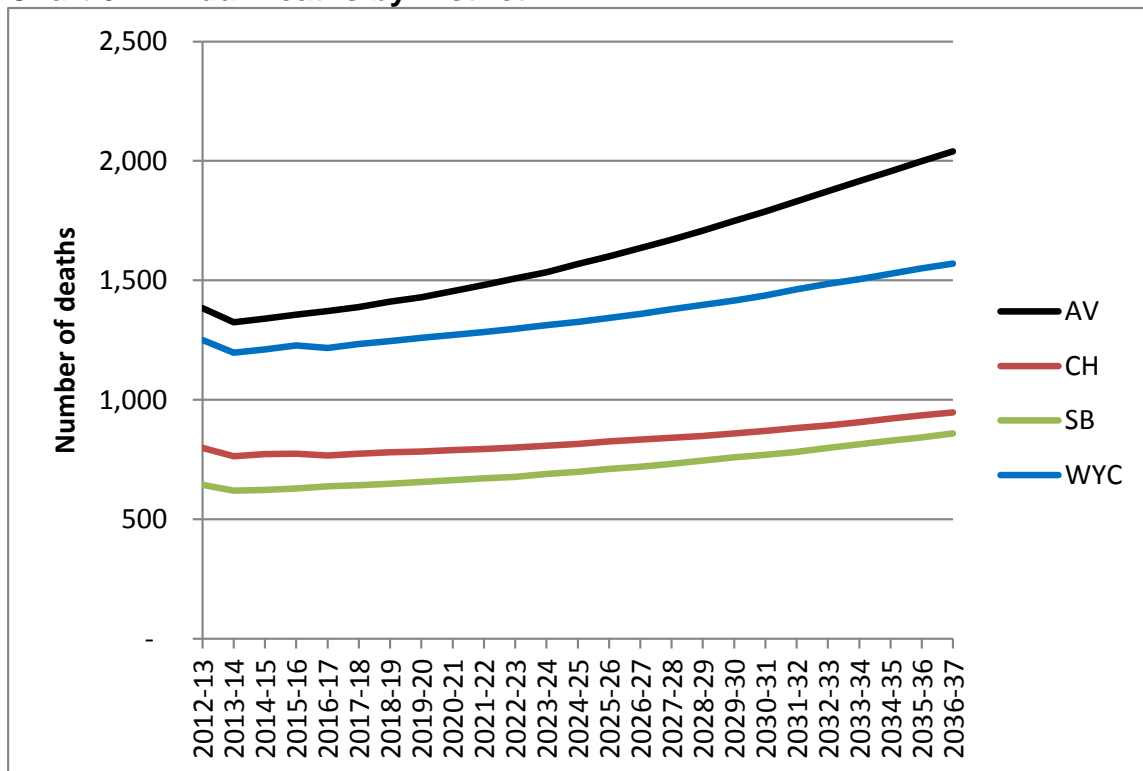
Table 2: Births by District

	Annual Births 2012/13	Annual Births 2025/26	Cumulative Births 2012-2026
Aylesbury Vale	2,195	2,280	31,773
Chiltern	912	872	12,406
South Bucks	718	743	10,390
Wycombe	2,220	2,180	30,913
Buckinghamshire	6,046	6,076	85,482

Future Trends in Deaths and Life Expectancy

- The number of deaths per year is expected to increase over time in all Districts (Chart 6).

Chart 6: Annual Deaths by District



- The assumption is that there will be over 400 more deaths per year by 2026 in Buckinghamshire (Table 3).
- It is assumed that Aylesbury Vale will experience the greatest increase (16%) in deaths between 2012 and 2026.

Table 3: Deaths per Year 2012 and 2026

	Deaths per Year 2012/13	Deaths per Year 2025/26	Difference
Aylesbury Vale	1,384	1,601	217
Chiltern	799	826	27
South Bucks	644	711	67
Wycombe	1,250	1,343	94
Buckinghamshire	4,077	4,481	404

Whilst the numbers of deaths will be highest in those populations that are large it is important to look at the death rates per population for comparison purposes.

The mortality rate is measured by the number of deaths per 1,000 people by age and is called the Age Specific Mortality Rate (ASMR). Charts 7 and 8 show the ASMRs⁴ for women and men in later life.

- The mortality rates are forecast to decline over the course of the projection for every age group and both genders (not shown).
- The assumption around mortality rates is that they begin to increase for men and women in their late 70s and are at their highest during their late 80s onwards.
- Women have lower ASMRs than men and this trend is set to continue.
- Aylesbury Vale has the highest ASMRs compared with the rest of Buckinghamshire at most ages.
- Chiltern followed by Wycombe has the lowest ASMRs.
- With the exception of Aylesbury Vale and occasionally South Bucks, Buckinghamshire has lower ASMRs than England.

⁴ Age Specific Mortality Rates are always calculated separately by gender

Chart 7: 2013/14 Age Specific Mortality Rates - Males

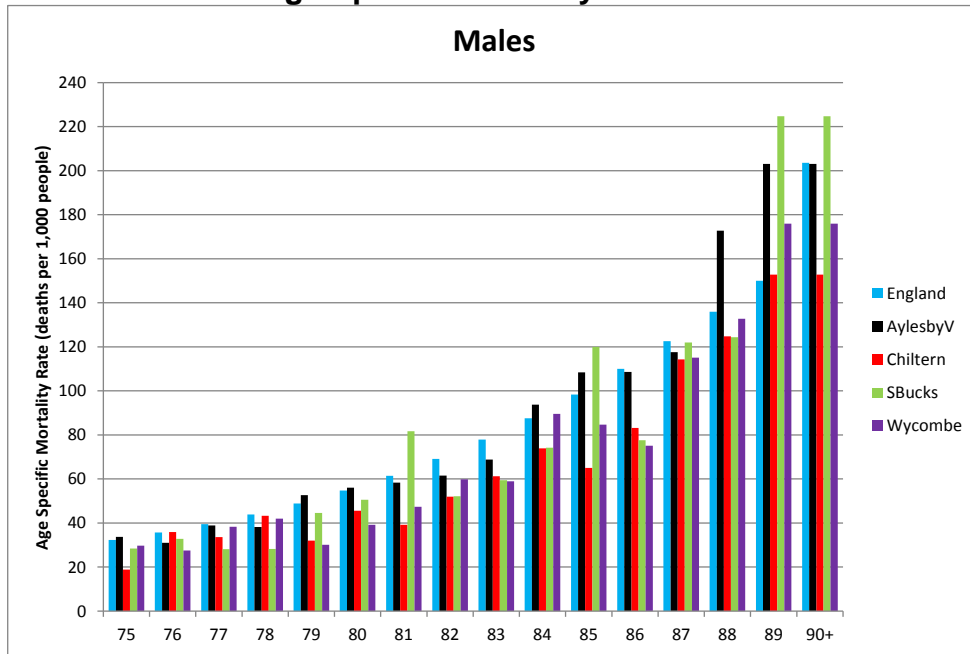
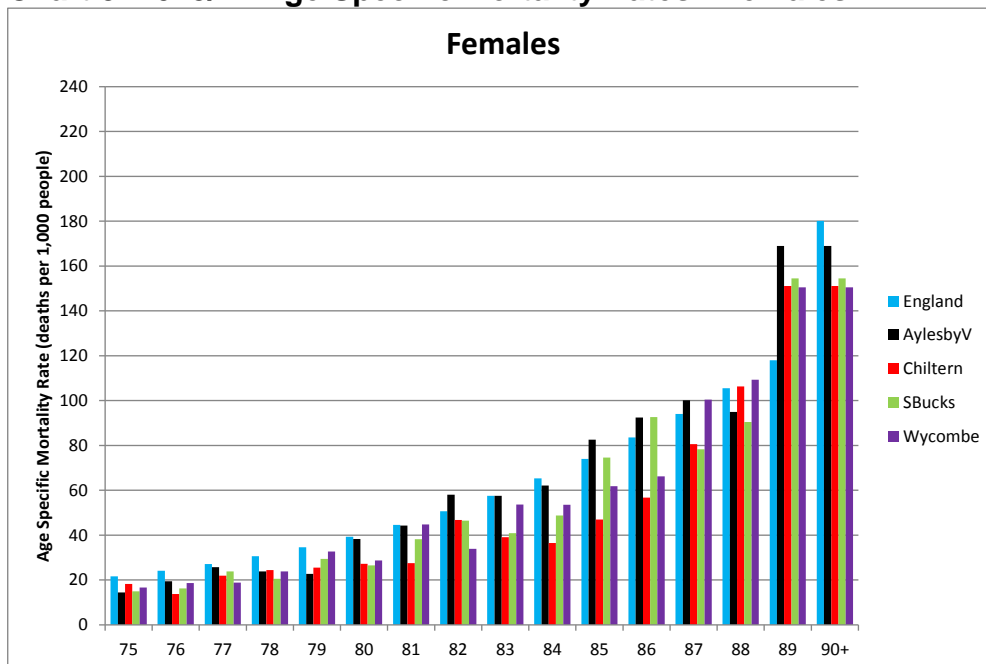


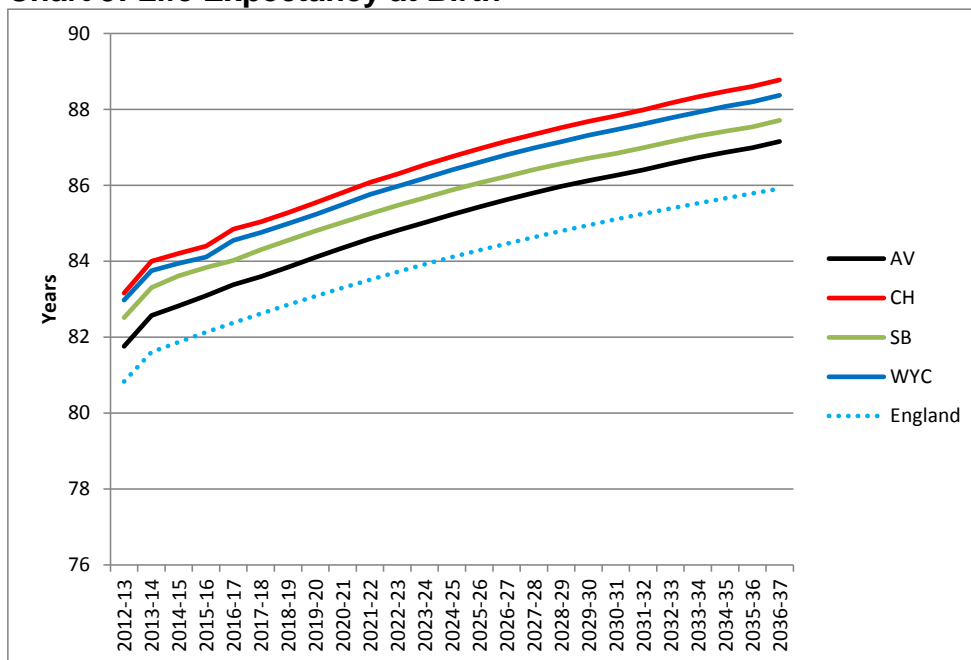
Chart 8: 2013/14 Age Specific Mortality Rates - Females



Life Expectancy

- As mortality rates decline, life expectancy is forecast to increase over time with people living longer until their mid to late 80s depending on district (Chart 9).
- Life expectancy is higher in females than males with women out-living men by an average of 3.4 years (2012/13). This trend is forecast to continue.
- Life expectancy is highest in Chiltern, followed by Wycombe then South Bucks. Aylesbury Vale has the worst life expectancy.
- Life expectancy in Buckinghamshire is higher than England by almost 2 years on average between 2012 and 2026.

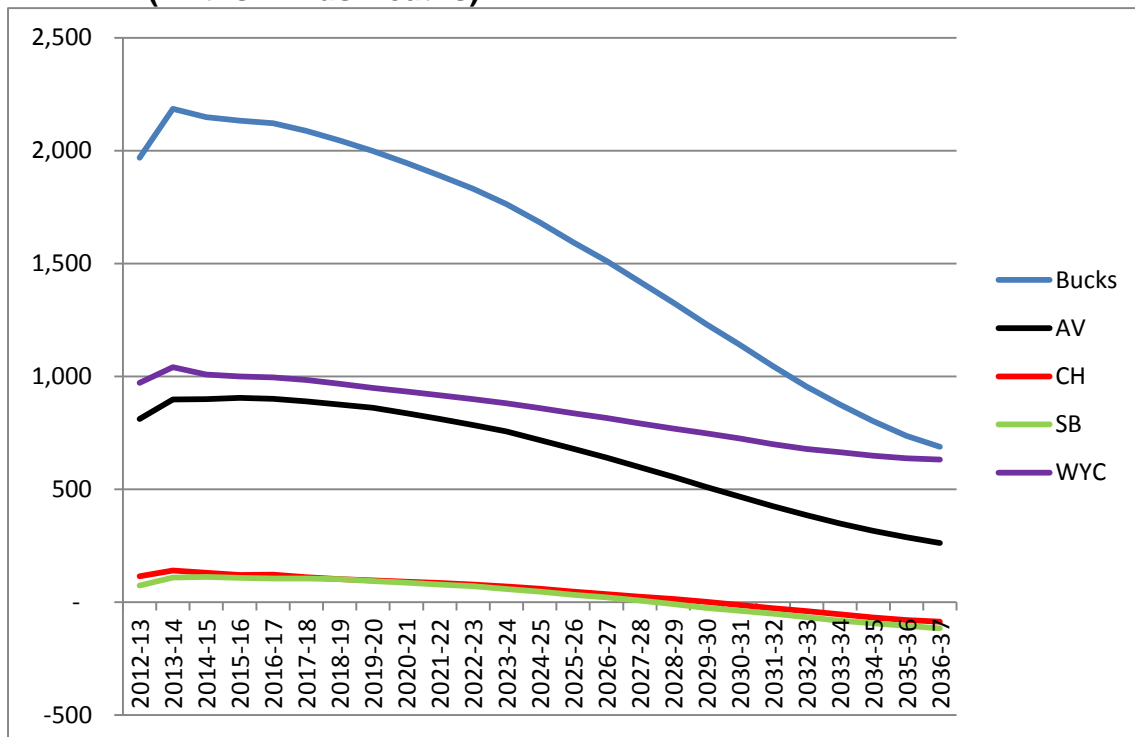
Chart 9: Life Expectancy at Birth



Overall Natural Change (Births minus Deaths)

- Population growth from natural change is expected to decrease over time.
- Whilst births remain fairly stable during the course of the projection the number of deaths increase causing less people to be added to the population each year.
- In the case of Chiltern and South Bucks the population resulting from natural change is projected to decline each year after 2030 as deaths overtakes births.
- Natural change accounts for around 60% of all population growth at the beginning of the projection, 45% in 2026, and only 24% at the end (2037).

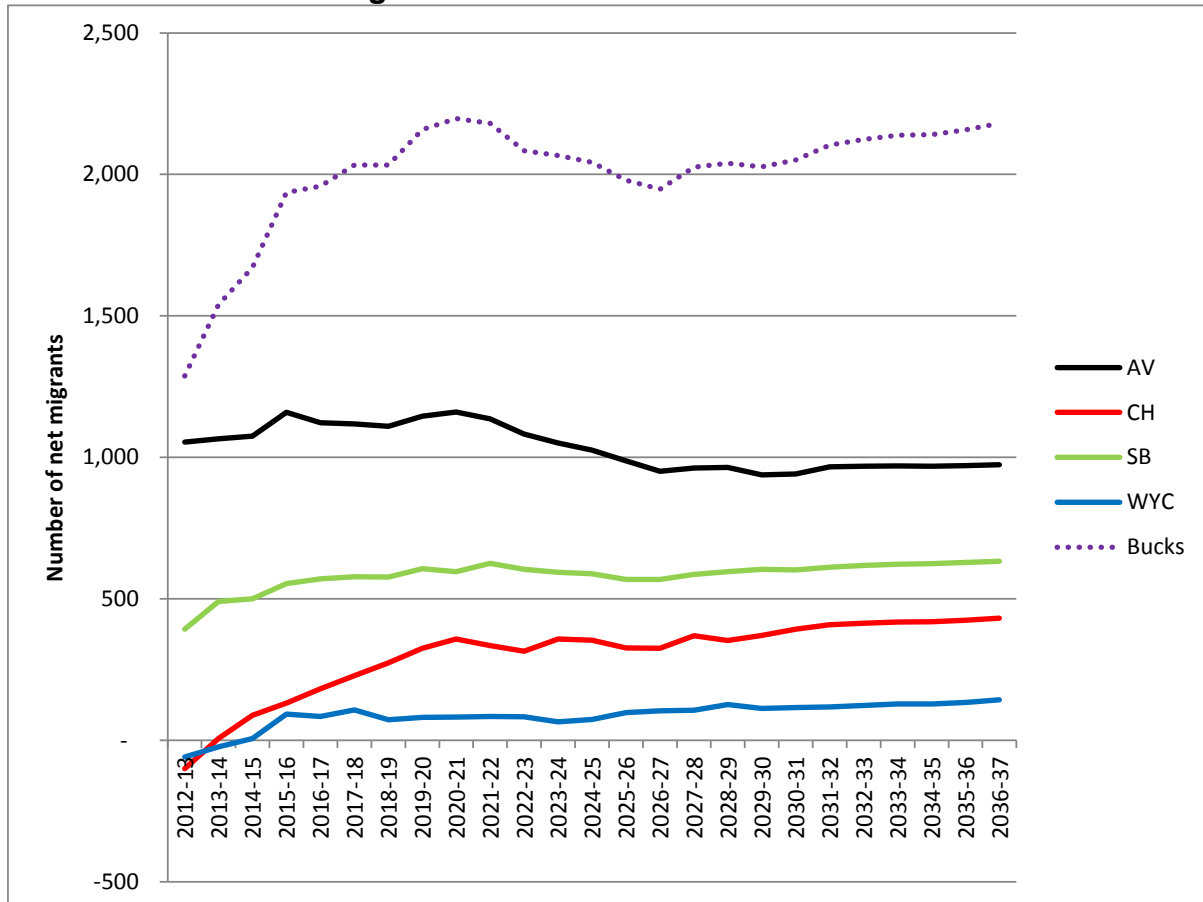
Chart 10: Annual Population Growth From Natural Change (Births minus Deaths)



Assumptions on Future Migration Trends

- Net migration is positive and accounts for around 60% of all population growth (average 2012-2037). More people are projected to come into the county than leave and this is increasing over the course of the projection.
- Only Aylesbury Vale's net migration is forecast to decline in the medium term although this district remains the single biggest contributor of net migrants to Buckinghamshire.
- Wycombe has the lowest levels of net migration.

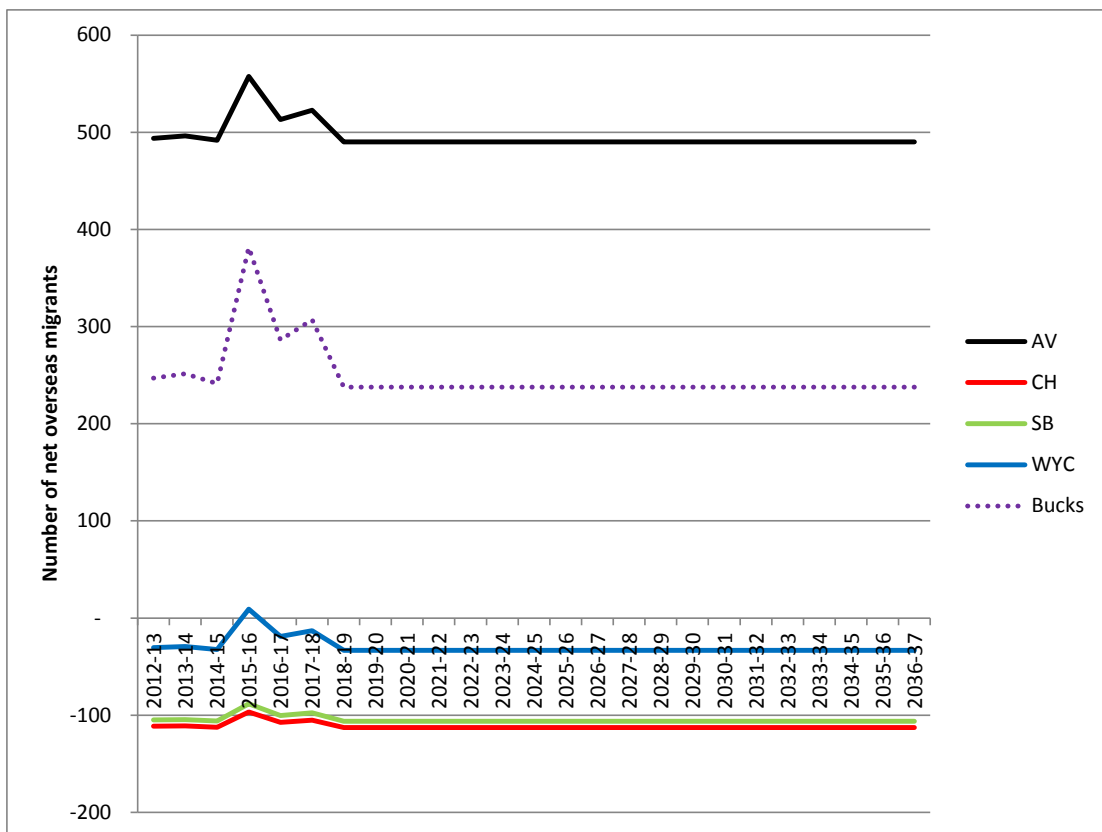
Chart 11: Annual Net Migrants



- Net migration is comprised predominantly of people moving into the county from other parts of the UK (81%) with overseas migration contributing only a small amount (19%) to the net migration figure (2012/13).
- It is assumed that between 1,000 and 2,000 more people per year move into Buckinghamshire from other parts of the UK than move out of Buckinghamshire (net internal migration) over the course of the projection.
- Between 200 and 400 more people per year move into the county from overseas than move out (net overseas migration).
- The age of migrants is similar for within UK and overseas migration. Most migration takes place in people's 20s and 30s with a corresponding small peak in infant age ranges. There is also a small peak later on in life as people retire.

- Although on a county level international migration is positive (i.e. 200-400 more people per year were coming into the county from overseas than leaving), this disguises differences by district (Chart 12).
- The population added by net overseas migration is from Aylesbury Vale only. Over 500 people per year (net) are projected to move into Aylesbury Vale from overseas. Each year it is projected that around 1,500 people per year move into Aylesbury Vale from overseas whilst around 900 people per year are projected to leave the district to live abroad.
- Chiltern and South Bucks are projected to have more people leaving to go overseas than coming into these districts (both have around 350 people moving in and 460 moving out) over the course of the projection.
- Wycombe⁵ has virtually equal numbers of people leaving and arriving from overseas with only slightly more (30 people) moving out than moving in (around 930 move in and 960 move out).

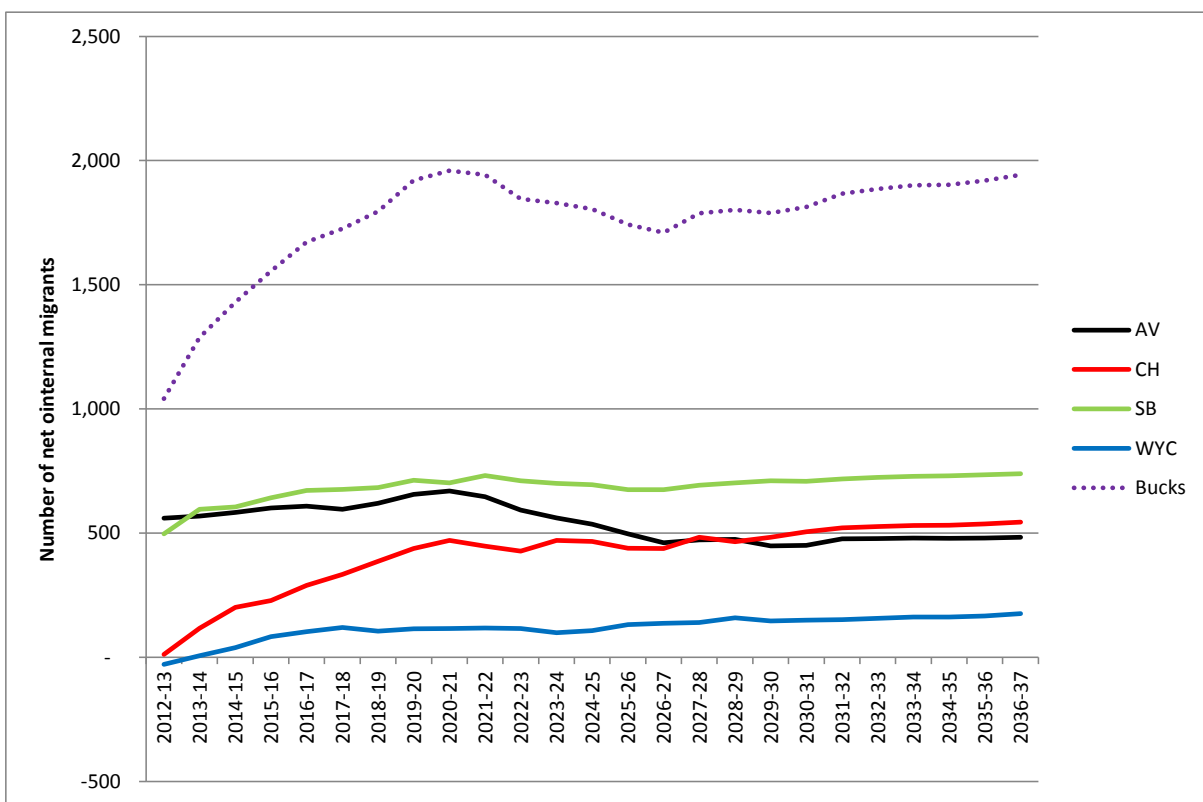
Chart 12: Annual Net International Migrants



⁵ NB This is slightly different to another BCC report 'Migration and Other Drivers of Population Change' which states that Wycombe has equal number of people leaving and arriving so the net overseas population contribution from Wycombe is zero. This was based on rounded figures from ONS. As the figures were so small, ONS rounded to zero when they released their SNPP figures in May 2014 upon which the report was based.

- The assumption is that net internal migration (from within the UK) is positive during the course of the projection. On average it accounts for around 88% of all net migration (2012-2037).
- On average around 28,600 people per year move into the county whilst around 26,900 people per year move out (2012-2037).
- There are differences by district as shown in Chart 9.
- South Bucks has the highest levels of net internal migration. Wycombe has the lowest levels.

Chart 13: Annual Net Internal (Within the UK) Migrants



APPENDIX IV

ASSUMPTIONS AROUND HOUSEHOLDS

Assumptions around future household size are based on the standard assumptions from the nationally produced 2011-based interim household projections.

The household projections are produced by the CLG (Department for Communities & Local Government) and the most recent figures were released in April 2013. An update to these figures is planned for Spring 2015.

The 2011-based interim projections are for the period 2011-2021.

- CLG's assumption is that household size in Buckinghamshire will fall steadily over the course of the projection from 2.48 persons per household in 2011 to 2.45 in 2021.

Household assumptions are important as they are used to calculate the number of people anticipated from the planned housing.

Table 1 shows the different components used to derive population from planned dwellings and their source.

Table 1: Components Used to Convert Dwellings to Population

Component	Source																								
Occupied households	<p>Source: 2011 census Table KS401EW</p> <p>The dwellings need to be converted into the number of occupied households using a conversion rate. The same 2011 rate is assumed for all years of the forecast.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;">All Occupied Household Spaces 2011</th> <th style="text-align: center;">All Dwellings 2011 Census</th> <th style="text-align: center;">2011 dwelling conversion to occupied households %</th> </tr> </thead> <tbody> <tr> <td>AV</td> <td style="text-align: center;">69,406</td> <td style="text-align: center;">71,883</td> <td style="text-align: center;">96.6%</td> </tr> <tr> <td>CH</td> <td style="text-align: center;">36,946</td> <td style="text-align: center;">38,287</td> <td style="text-align: center;">96.5%</td> </tr> <tr> <td>SB</td> <td style="text-align: center;">26,514</td> <td style="text-align: center;">27,709</td> <td style="text-align: center;">95.7%</td> </tr> <tr> <td>WYC</td> <td style="text-align: center;">67,861</td> <td style="text-align: center;">70,087</td> <td style="text-align: center;">96.8%</td> </tr> <tr> <td>BUCKS</td> <td style="text-align: center;">200,727</td> <td style="text-align: center;">207,966</td> <td style="text-align: center;">96.5%</td> </tr> </tbody> </table>		All Occupied Household Spaces 2011	All Dwellings 2011 Census	2011 dwelling conversion to occupied households %	AV	69,406	71,883	96.6%	CH	36,946	38,287	96.5%	SB	26,514	27,709	95.7%	WYC	67,861	70,087	96.8%	BUCKS	200,727	207,966	96.5%
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Population living in Households (total population minus communal population)	<p>Source: 2011-based interim ONS sub-national population projections (SNPP). <u>Total population</u> 2011 mid-year estimate is the starting population and</p>																								

	<p>runs to 2021. NB There are differences between the 2011 and 2012 based SNPP. These are summarised below.</p> <table border="1" data-bbox="644 367 1193 750"> <thead> <tr> <th colspan="2" data-bbox="644 367 1193 488">Summary of 2011-based population and 2012-based population differences from ONS' SNPP</th> </tr> </thead> <tbody> <tr> <td data-bbox="644 488 778 521">AV</td> <td data-bbox="778 488 1193 521">Very similar</td> </tr> <tr> <td data-bbox="644 521 778 584">CH</td> <td data-bbox="778 521 1193 584">2011 population figures higher than 2012 by around 2k</td> </tr> <tr> <td data-bbox="644 584 778 647">SB</td> <td data-bbox="778 584 1193 647">2011 population figures higher than 2012 by around 1.5k</td> </tr> <tr> <td data-bbox="644 647 778 710">WYC</td> <td data-bbox="778 647 1193 710">2011 population figures lower than 2012 by around 2-3k</td> </tr> <tr> <td data-bbox="644 710 778 750">BUCKS</td> <td data-bbox="778 710 1193 750">Very similar</td> </tr> </tbody> </table> <p><u>Communal Population</u> Source: derived from 2011-based interim CLG household projections model outputs</p> <p>2011 mid-year estimate is the starting population and runs to 2021.</p> <p>As figures post 2021 are not provided, the 2021 figure has been used for the remainder of the projection (2022 -2026).</p> <p>The CLG assumptions are that the communal population will gradually rise slightly over the course of the projection.</p>	Summary of 2011-based population and 2012-based population differences from ONS' SNPP		AV	Very similar	CH	2011 population figures higher than 2012 by around 2k	SB	2011 population figures higher than 2012 by around 1.5k	WYC	2011 population figures lower than 2012 by around 2-3k	BUCKS	Very similar
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Household headship rates	<p>Source: 2011-based interim CLG household projections</p> <p>2011 mid-year estimate is the starting population and runs to 2021.</p> <p>CLG do not yet provide figures post 2021 so the assumption is that the 2021 figure is used for the remainder of the projection (2022 -2026).</p> <p>This is the proportion of households 'headed' by a particular type (e.g. single person, pensioner, family, couple). This dictates average household size and the resulting population from the dwellings.</p>												