



HEREFORDSHIRE  
COUNCIL

***POPULATION PROJECTIONS AND FORECASTS  
FOR THE COUNTY OF HEREFORDSHIRE***

*2006-based Herefordshire population forecasts: overview  
of results*

***April 2008***

**Version 1.1**

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## **SUMMARY OF PRINCIPAL POPULATION FORECASTS**

Herefordshire Council's Research Team produces projections and forecasts of the future resident population of the county of Herefordshire. This paper provides an overall analysis of the 2006-based figures, which replace the 2005-based forecasts published in July 2007.

These forecasts are based on the Office for National Statistics' (ONS) 2006 mid-year estimates and take account of future trends in fertility, mortality and migration predicted for the 2006-based national population projections, with local adjustments where appropriate.

Forecasts to 2011 are constrained to the housing supply expected under the adopted Unitary Development Plan, whilst provision under the current (phase 2 revision) Preferred Option of the Regional Spatial Strategy provides the constraint for forecasts to 2026.

Key results from the 2006-based principal population forecasts are:

- The total population of Herefordshire in 2011 is forecast to be 182,400. This is a 2.6% increase from 2006, and equates to an average growth of 0.5% per annum.
- The total population in 2026 is forecast to be 193,600; a growth of 8.9% from 2006.
- The average annual rate of growth over the entire twenty year forecast period is 0.4%, which is lower than observed over the last fifteen years (0.7% per annum between 1991 and 2006) – but very slightly higher than in the last five years (0.3% between 2001 and 2006).
- The number of under 16s is forecast to continue to fall until 2016, although at a slightly lower rate (0.9% p.a.) than in recent years (1.3% p.a. between 2001 and 2006). Numbers are then expected to stabilise at around 29,000 (9.4% below 2006 levels).
- The numbers aged 16 to 64 will continue to increase very slightly until 2011 (a 1.0% growth from 2006, compared to 2.6% between 2001 and 2006), but will then begin to fall steadily as the post-war 'baby-boomers' move into retirement age and are replaced by smaller cohorts of younger adults. There are forecast to be 103,600 people in this age-group by 2026 (5.4% fewer than in 2006)
- The number of people aged 65 and over is forecast to continue to increase, but more rapidly than in recent years (an average of 3.4% p.a. between 2006 and 2026 compared to 1.4% p.a. since 2001). By 2026 the number of Herefordshire residents of this age is forecast to be 61,000 (68.0% higher than in 2006). In particular, the number of people aged 85 and over is expected to more than double, from 4,800 in 2006 to 10,200 in 2026.

## **INTRODUCTION**

Herefordshire Council's Research Team produces projections and forecasts of the future resident population of the county of Herefordshire. This paper provides an overall analysis of the 2006-based figures, which replace the 2005-based forecasts published in July 2007.

These forecasts are based on the Office for National Statistics' (ONS) 2006 mid-year estimates and take account of future trends in fertility, mortality and migration predicted for the 2006-based national population projections, with local adjustments where appropriate.

The key difference between a population projection and forecast is that, whilst projections are produced by taking forward recent local and nationally predicted trends in fertility, mortality and migration, a forecast takes account of anticipated housing supply in the county, and this is more realistic.

Until now, forecasts could not be produced beyond 2011, the end of the current Unitary Development Plan (UDP) period, as the likely housing supply after this point was unknown. Emerging figures from the Regional Spatial Strategy (RSS) have enabled the 2006-based forecasts of Herefordshire's population to run to 2026.

The emphasis in this paper is on the 'principal forecast' to 2026, which is the 'most likely' scenario of future changes in the population. However, consideration is also given to the 'principal projection', i.e. what would be most likely to happen to the population if recent local and nationally projected trends were to continue, regardless of housing provision.

A range of variant projections and forecasts have also been produced, to facilitate understanding of the sensitivity around the principal forecast under different assumptions regarding future fertility, mortality and migration.

A full description of the supporting methodology will be published in a separate document, but a summary of the key assumptions can be found in the appendix to this paper. A series of papers will also be made available with a focus on what the forecasts suggest for particular age-groups, and how sensitive they are to changes in the underlying assumptions.

The full set of forecasts and all related reports are or will be available to download online from [www.herefordshire.gov.uk/research](http://www.herefordshire.gov.uk/research)

## **CHANGE IN TOTAL POPULATION**

As mentioned in the introduction above, the starting point for the principal *forecast*, i.e. the best estimate of what is expected to happen to the population of Herefordshire over the twenty years from 2006 to 2026, is the principal *projection*.

The assumptions underlying the principal projection are summarised in the appendix (p.13); if recent trends in fertility, mortality and migration were to continue, with fertility and mortality rates following future trends predicted by ONS, the population of Herefordshire would be expected to grow from 177,800 in 2006 to 180,400 by 2011 and 185,700 by 2026.

According to trends in household formation<sup>1</sup> projected by the Department for Communities and Local Government (CLG) (revised 2004-based household projections), this projected growth would result in 3,400 extra households by 2011 and almost another 9,400 by 2026.

It should be noted that, if there were to be no change (not even ageing) in the population between 2006 and 2026, anticipated changes in household formation would yield an increase of around 600 households by 2011 and a further 1,400 by 2026. The assumptions driving this change are an increase in the proportion of people living alone and a small decline in the proportion of people living as part of a couple.<sup>2</sup>

However, under the adopted UDP, just over 4,300 net new dwellings will be available between 2006 and 2011. Even allowing for a 3% vacancy rate<sup>3</sup>, this provides 800 more dwellings by 2011 than the principal population projection would suggest are occupied.

The principal population forecast takes the principal projection as a starting point, but then the assumptions regarding migration between the county and the rest of the UK are adjusted to constrain the population to the anticipated housing provision. Therefore, under the UDP, **the population of Herefordshire in 2011 is forecast to be 182,400: a 2.6% increase from 2006** (which equates to an average growth of 0.5% per annum).

Although housing targets under the Regional Spatial Strategy will not be finalised until at least 2009, the current preferred option<sup>4</sup> is for 16,600 new dwellings (net) in Herefordshire between 2006 and 2026 – i.e. an additional 12,300 between 2011 and 2026, once the UDP period comes to an end. Even allowing for a 3% vacancy rate, this would provide 2,500 more dwellings than the principal projection to 2026 suggests would be occupied.

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<sup>1</sup> 2004-based household projections. Revised projections, consistent with ONS' revised 2004-based population projections, were published on 28<sup>th</sup> Feb 2008 – too late for consideration in the 2006-based population forecasts. There do not appear to be any changes to the underlying assumptions, but household representative rates may have changed slightly due to constraining techniques employed; methodology is available from: <http://www.communities.gov.uk/news/corporate/707319>.

<sup>2</sup> single person households are projected to increase from 16% of those aged 15+ living in private households in 2006 to 18% by 2011 and 22% by 2026; 31% of people aged 15+ in private households were estimated to be the 'head' of a couple household in 2006 - this is predicted to fall to 30% by 2026.

<sup>3</sup> As assumed in the Regional Spatial Strategy phase 2 revision Preferred Option; see note 4.

<sup>4</sup> RSS phase 2 revision Preferred Option; available at [www.wmra.gov.uk/page.asp?id=386](http://www.wmra.gov.uk/page.asp?id=386).

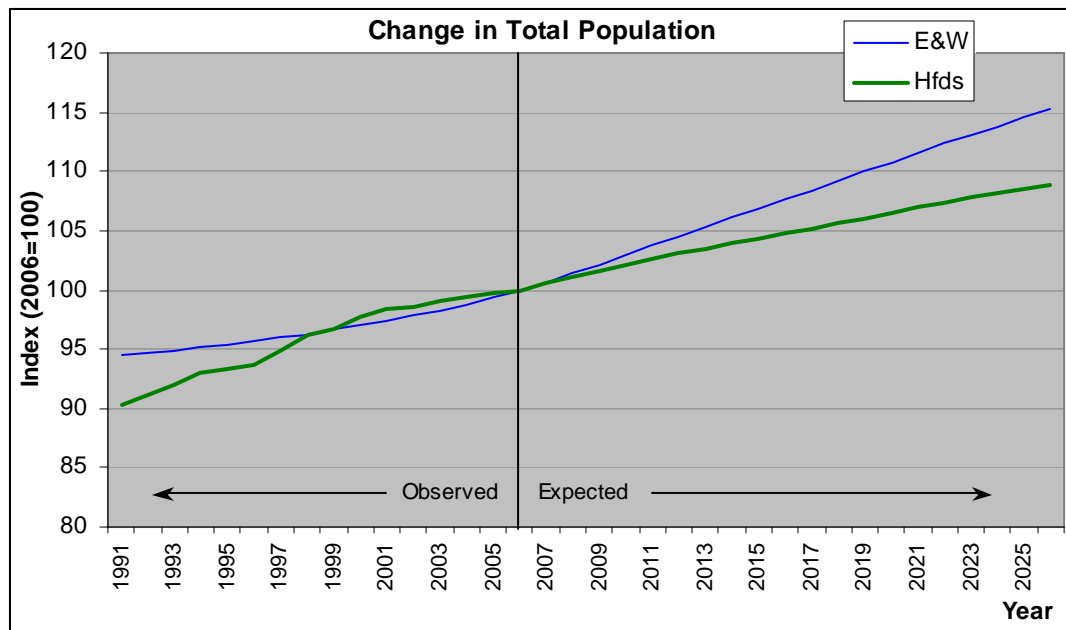
Adjusting the within-UK migration assumptions to reflect this level of housing provision, **the forecast population of Herefordshire in 2026 is 193,600: a growth of 8.9% from 2006.** The change between 2011 and 2026 equates to an average annual growth of 0.4%, a slightly slower rate than between 2006 and 2011. This is because the annual rate of house building is anticipated to be slightly lower after 2011 than in the final five years of the UDP (around 820 dwellings per annum compared to 870).

The forecast change in Herefordshire’s population, relative to both growth since 1991 and the observed and projected change in the population of England & Wales, is shown in Figure 1 below. Herefordshire’s population grew at around double the national rate of growth between 1991 and 2006 (9.8% compared to 5.5%), but has been subject to more fluctuation. Although the county’s population grew by 9.8% over fifteen years, it increased by only 1.7% in the last five years of this period - an average annual rate of growth of 0.3% between 2001 and 2006.

The rate of population growth in the county is expected to be very slightly higher than recently observed – an average of 0.4% per annum over the entire twenty year forecast period. This is half the average annual rate of growth projected for England and Wales (0.8%).

It should be noted, again, that the future population of England and Wales is a projection – i.e. it does not take any account of future housing provision across the country.

**Figure 1: Observed and expected change in total population of Herefordshire and England & Wales, 1991 to 2026**



Source: ‘Observed’ figures are ONS mid-year estimates; ‘Expected’: E&W – ONS 2006-based national population projections; Hfds – HC Research Team 2006-based population forecasts. NB. Estimates before 2001 are not strictly comparable as they used a methodology that has now been replaced.

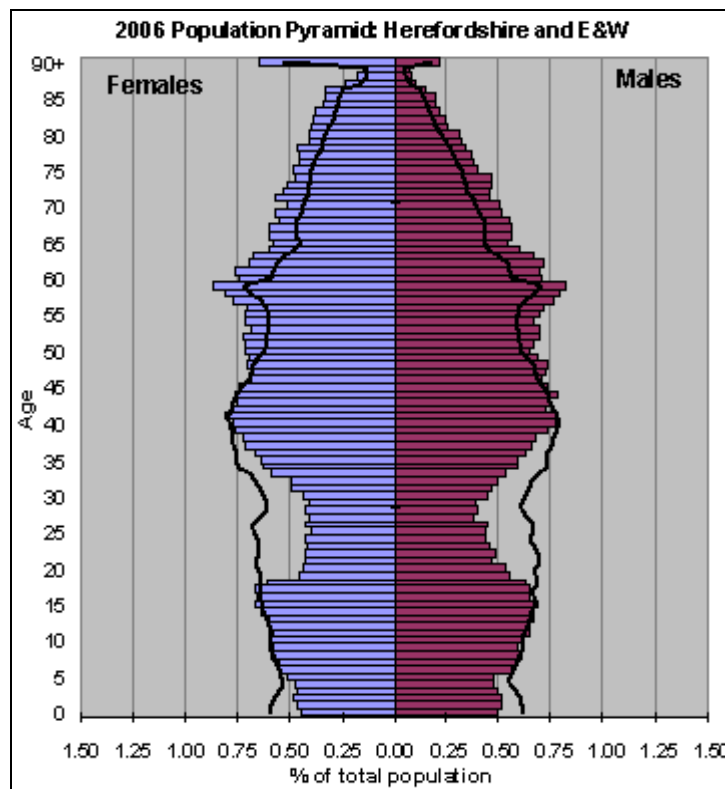
## **CHANGES IN AGE STRUCTURE**

The forecast steady rise in the total population of Herefordshire masks differing changes expected for age-groups within the population. Before examining what the forecasts mean for the future age structure of Herefordshire's population, it is worth considering the starting point – i.e. the current structure. The population pyramid (Figure 2) below shows how Herefordshire's profile differs from that of England & Wales according to the ONS 2006 mid-year estimates. Each bar represents the percentage of Herefordshire's population of the corresponding age and gender, whilst the lines show the equivalent value in the population of England & Wales.

Whilst both have 'bulges' in the older working age population, as a result of the baby booms after the second world war and in the 1960s<sup>5</sup>, Herefordshire has higher proportions than nationally of all ages from around 50 onwards. The other key features are that the county has a notable 'gap' in the young adult age-groups, and although it has similar proportions of older children, there are relatively small numbers of children aged five and under at the base of the pyramid.

The ageing of these cohorts, with appropriate fertility, mortality and migration rates applied, forms the basis for predictions of the future population.

**Figure 2: Age structure of Herefordshire compared to England & Wales, 2006**



*NB. Lines represent E&W; bars Herefordshire.*

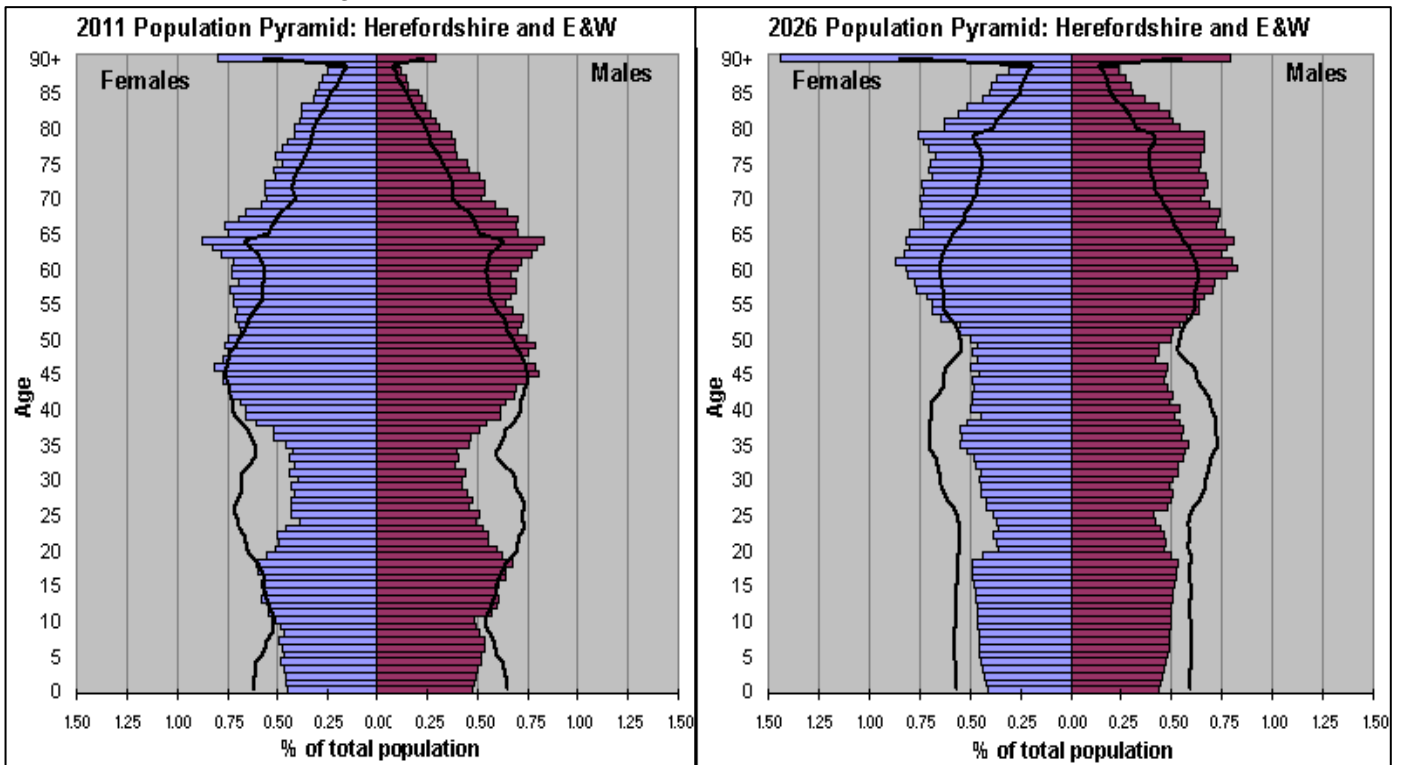
*Source: 2006 Mid-year estimates; Population Estimates Unit, ONS. Crown copyright.*

<sup>5</sup> [http://www.tomorrowproject.net/pub/1\\_GLIMPSES/Life\\_course/-544.html](http://www.tomorrowproject.net/pub/1_GLIMPSES/Life_course/-544.html)

The next two pyramids (Figure 3) show the age structure of Herefordshire according to the population forecasts for 2011 and 2026, compared to the national population projections for England & Wales.

Note that the ageing effect means that each cohort (represented by a bar for Herefordshire) on the 2006 pyramid (Figure 2) will have moved five years up the pyramid by 2011 and twenty by 2026.

Figure 3: Forecast age structure of Herefordshire compared to projected age structure of England & Wales, 2011 & 2026



NB. Lines represent E&W; bars Herefordshire. Source: Hfds – HC Research Team 2006-based population forecasts; E&W – ONS 2006-based national population projections. Crown copyright.

The main features to note from Figure 3 are:

- The ageing of the narrow base of Herefordshire's pyramid. The under 5s of 2006 become the 5 to 9 year-olds of 2011 (increased slightly by net immigration of children) and then the 20 to 24 year-olds of 2026 (reduced by net out-migration of young adults).
- The squarer base of the pyramid by 2026 illustrates how numbers of births are forecast to be fairly constant over the period (those aged under 20 in 2026 will have been born since 2006).
- The ageing of the very narrow section (i.e. relatively small proportions) of Herefordshire's pyramid, from roughly ages 20 to 30 in 2006 to those aged 25 to 35 by 2011 and 40 to 50 by 2026 (although numbers will increase due to migration throughout the period).
- The movement of the 1960s' 'baby boomers' into retirement age over the twenty year period increases the proportion of the national population in older age groups. However, Herefordshire continues to have a higher proportion of its population in the older age groups, with the difference becoming more marked.

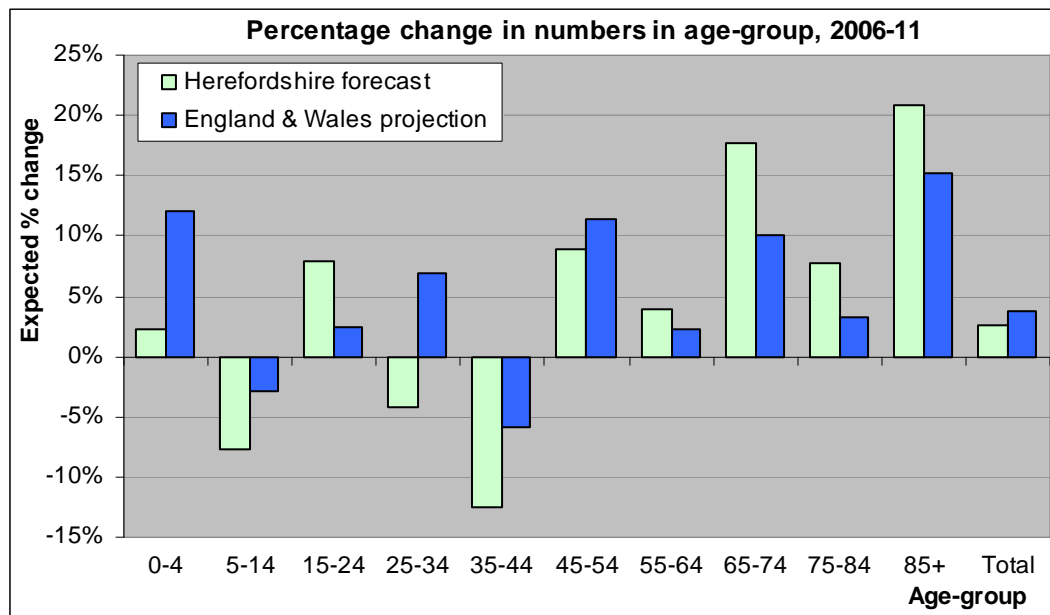
The charts in Figures 4 and 5 below illustrate what the changing shape of Herefordshire’s population pyramid over the forecast period means in terms of percentage change in the number of people in age-groups. To put the expected percentage changes into context, Table 6 shows the numbers in each age-group in 2006, 2011 and 2026.

Figure 4 shows expected changes in the short-term, i.e. between 2006 and 2011. Forecast changes in Herefordshire are generally in the same direction as projected nationally, but of differing magnitudes. The exception is that the number of 25-34 year-olds is forecast to fall by around 4.2% in Herefordshire yet projected to increase by 6.9% nationally. This is due to the ageing of the very narrow section of Herefordshire’s population pyramid discussed earlier.

The number of under 5s in Herefordshire is expected to rise in the short-term (by 2.3%), but not as rapidly as nationally (12.1%); the number of 5 to 14 year-olds is expected to fall more rapidly in the county than in England & Wales (7.6% compared to 2.8%).

Even though fertility rates in Herefordshire are similar to those of England and Wales overall, a smaller increase in the number of under 5s is not surprising when considered alongside a forecast fall in the number of 25-34 and 35-44 year-olds in the county – which includes women of child-bearing age. The relationship between fertility rates and numbers of children will be examined in detail in a forthcoming paper.

Figure 4: Expected population change by age-group, 2006 to 2011

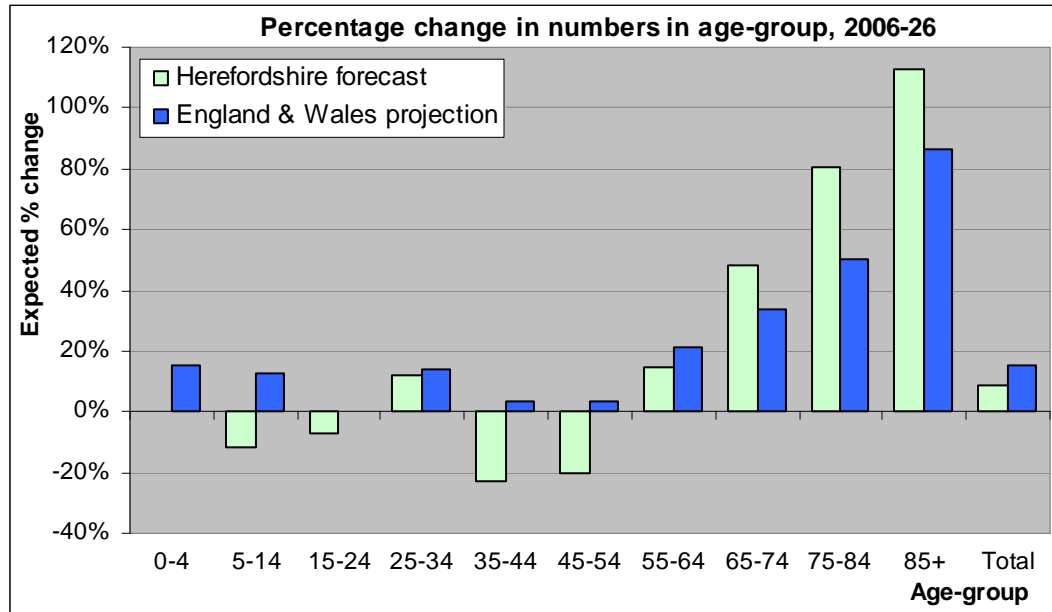


Source: Hfds – HC Research Team 2006-based population forecasts; E&W – ONS 2006-based national population projections. Crown copyright.

Figure 5 illustrates the changes expected over the longer-term; i.e. between 2006 and 2026. The most notable changes, both nationally and locally, are expected to be in the older age-groups, and as noted in the population pyramid (Figure 3), this growth is forecast to be more rapid in Herefordshire – with the number people aged 85 and over expected to more than double from 4,800 in 2006 to 10,200 in 2026.

There is not expected to be any change in the number of under 5s in Herefordshire in the long-term, in comparison with a 15.4% rise nationally. Furthermore, whilst the numbers of 5 to 14s in England & Wales are projected to rise by 12.9%, they are forecast to *fall* by a similar magnitude locally (11.9%).

Figure 5: Expected population change by age-group, 2006<sup>6</sup> to 2026



Source: Hfds – HC Research Team 2006-based population forecasts; E&W – ONS 2006-based national population projections. Crown copyright.

Table 6: Estimated population and forecast change in Herefordshire, by age

Age	Mid-year estimate 2006	Forecasts			
		2011		2026	
		Numbers	% change from 2006	Numbers	% change from 2006
0-4	8,600	8,800	+2.3%	8,600	0.0%
5-14	21,000	19,400	-7.6%	18,500	-11.9%
15-24	19,000	20,500	+7.9%	17,600	-7.4%
25-34	16,500	15,800	-4.2%	18,500	+12.1%
35-44	25,700	22,500	-12.5%	19,900	-22.6%
45-54	24,900	27,100	+8.8%	19,900	-20.1%
55-64	25,800	26,800	+3.9%	29,600	+14.7%
65-74	18,700	22,000	+17.6%	27,700	+48.1%
75-84	12,800	13,800	+7.8%	23,100	+80.5%
85+	4,800	5,800	+20.8%	10,200	+112.5%
<b>Total population</b>	<b>177,800</b>	<b>182,400</b>	<b>+2.6%</b>	<b>193,600</b>	<b>+8.9%</b>

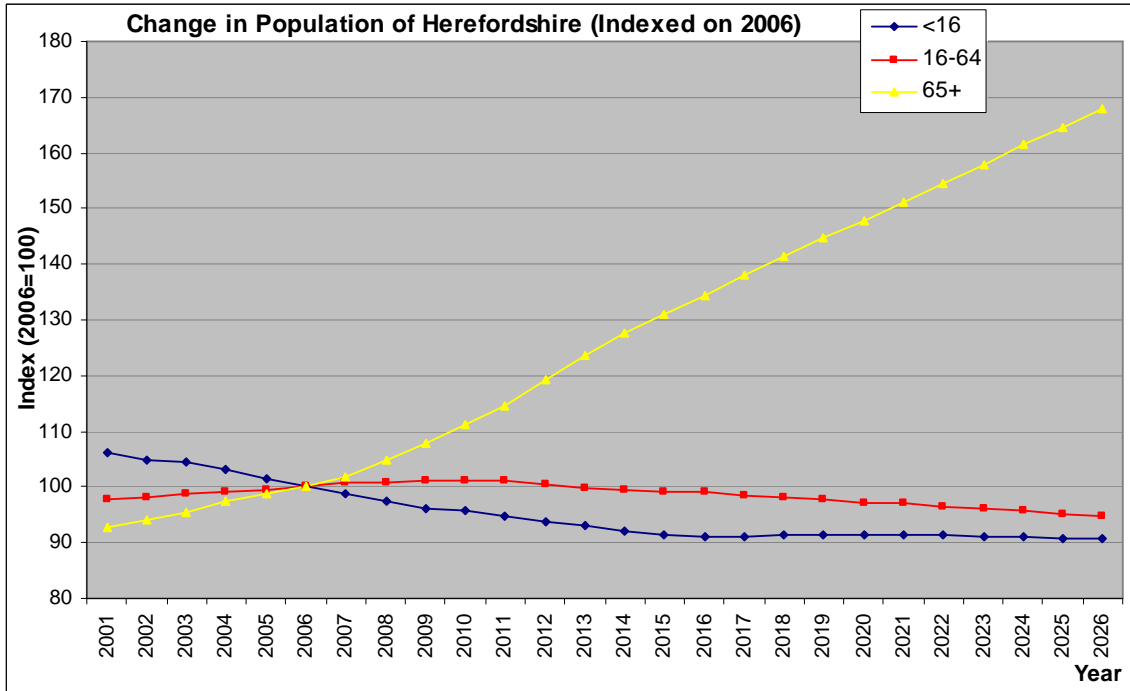
Source: MYEs - Population Estimates Unit, ONS. Crown copyright; Forecasts – HC Research Team using ONS estimates and rates. All figures rounded to 100 so totals may not sum.

<sup>6</sup> NB. Error in Version 1 indicated this chart was 2011 to 2026.

## **CHANGES IN BROAD AGE GROUPS**

Whereas the previous section considered the forecast change in the structure of Herefordshire’s population between specific time points, Figure 7 illustrates how numbers of people in broad age-groups have changed in recent years and are expected to change over the course of the forecast period.

**Figure 7: Observed and forecast change in broad age-groups in Herefordshire**



Source: MYEs - Population Estimates Unit, ONS. Crown copyright; Forecasts – HC Research Team using ONS estimates and rates.

As suggested by earlier charts and discussion, the most notable change in Herefordshire’s population is expected to be in the 65 and over age-group. Numbers in this age-group increased by 7.2% between 2001 and 2006 (an average of 1.4% per year), and are expected to continue to increase at a fairly steady rate to 2026 – although more quickly than in recent years (an average of 3.4% per annum).

The population aged 16 to 64 increased slightly from 2001 to 2006 (2.6%), and this growth is forecast to continue in the short-term, with a further 1.0% growth by 2011. Numbers will decline steadily from this point onwards as the post-war ‘baby-boomers’ move into retirement age and are replaced by smaller cohorts of younger adults (see Figure 3). By 2026 the number of 16 to 64 year-olds is expected to be 5.4% lower than in 2006.

The number of under 16s fell by 6.3% between 2001 and 2006 (an average of 1.3% per year). This decline is forecast to continue until 2016 (by an average of 0.9% per year) before stabilising around 9% below 2006 levels.

To put these changes into context, Table 8 shows the estimated and forecast numbers of people in each of the broad age groups discussed in 2001, 2006, 2011 and 2026.

Table 8: Estimated and forecast population of Herefordshire, by broad age-group

Age	Mid-year estimates		2006-based forecasts	
	2001	2006	2011	2026
Under 16	34,000	32,000	30,300	29,000
16 to 64	107,200	109,500	110,600	103,600
65 and over	33,700	36,300	41,600	61,000
<b>Total population</b>	<b>175,800</b>	<b>177,800</b>	<b>182,400</b>	<b>193,600</b>

Source: MYEs - Population Estimates Unit, ONS. Crown copyright; Forecasts – HC Research Team using ONS estimates and rates. All figures rounded to 100 so totals may not sum.

## **SENSITIVITY ANALYSIS OF PRINCIPAL POPULATION FORECAST**

As the Government Actuary’s Department explains, “...due to the inherent uncertainty of demographic behaviour, any set of projections will inevitably be proved wrong, to a lesser or greater extent, as a forecast of future demographic events or population structure.”<sup>7</sup> They therefore produce a range of variant national projections based on alternative assumptions around the components of population change.

The principal forecast is the Research Team’s prediction of what is most likely to happen to the population of Herefordshire between 2006 and 2026. However, ‘variant’ projections and forecasts have also been produced to facilitate understanding of the sensitivity around this forecast.

### **Different demographic assumptions**

Variant projections for Herefordshire were produced by altering one or more of the key demographic assumptions, i.e. fertility rates, mortality rates, migration rates to/from the rest of the UK and net migration from overseas. Details of the variant assumptions, and the range of variant projections considered, will be provided in the methodology paper mentioned in the introduction.

However, whilst variant projections can illustrate the sensitivity around the demographic assumptions, only variant forecasts can provide a realistic alternative picture of the possible future population of Herefordshire. This is because future housing provision necessarily affects migration to the county.

Due to the amount of work involved, it is not feasible to convert every variant projection into a forecast, with migration constrained to the principal housing assumption of 16,600 new dwellings (net) between 2006 and 2026.

Therefore, a ‘high’ and a ‘low’ population forecast have been produced and are discussed here to give an indication of how sensitive the total population forecast is to changes in the underlying assumptions. The former assumes high fertility rates and net immigration combined with low mortality rates; the latter the opposite. The starting point for migration between Herefordshire and the rest of the UK is the principal assumption of the average age-sex-specific rates observed over the last

<sup>7</sup> [www.gad.gov.uk/Demography\\_Data/Population/2006/methodology/varpurpose.asp](http://www.gad.gov.uk/Demography_Data/Population/2006/methodology/varpurpose.asp)

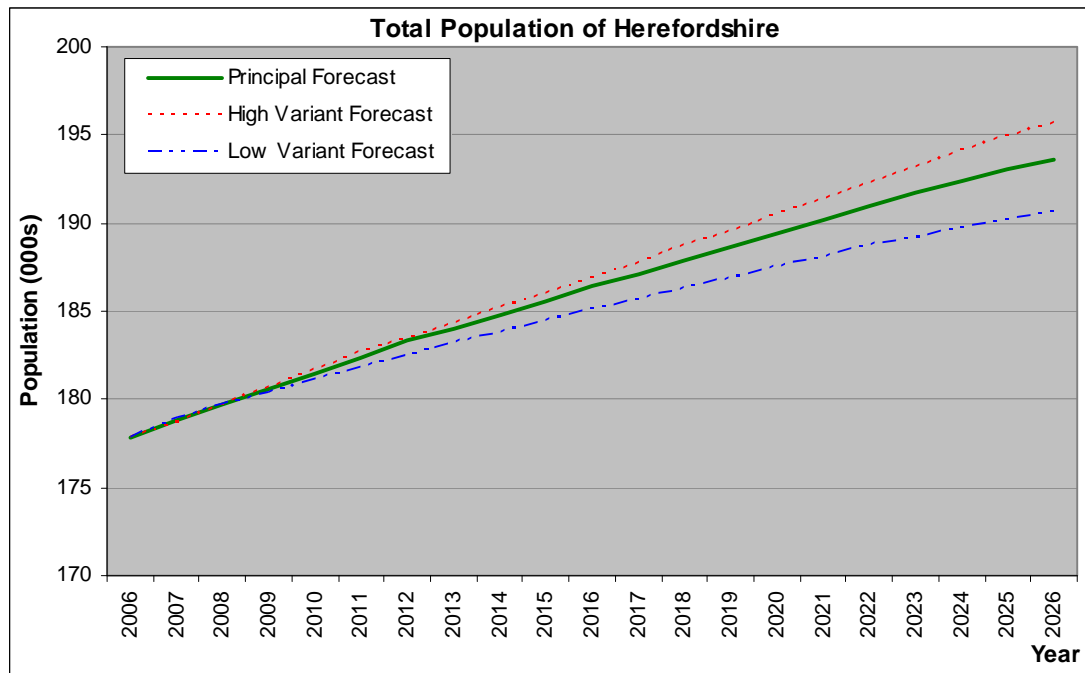
Responsibility for producing national population projections has moved to ONS, but the projections are still published on the GAD website.

three years, but these are then adjusted to meet the anticipated housing supply of 16,600 new dwellings.<sup>8</sup>

The sensitivity of particular age-groups to the differing assumptions will be considered in detail in subsequent reports that were mentioned in the introduction (p.3), but the change in the *total* population of Herefordshire according to these variant forecasts is illustrated in Figure 9.

Whilst the principal forecast gives a total of 193,600 residents in the county by 2026, under the less likely assumptions of the high variant forecast, the population could be 195,700 (1.1% higher). Conversely, if the assumptions of the low variant were realised, the total population could be 190,600 (1.5% lower).

**Figure 9: Total population of Herefordshire under variant population forecasts**



Source: Herefordshire Council Research Team, based on ONS estimates and rates.

### **Higher housing provision**

The levels of new housing development in Herefordshire between 2011 and 2026, when the adopted Unitary Development Plan (UDP) comes to an end, will be determined in the Regional Spatial Strategy (RSS).

The current (phase 2 revision) Preferred Option would see 16,600 new dwellings (net) built in Herefordshire between 2006 and 2026, and this is taken as the housing level to which migration is constrained for the principal population forecast.

However, the Government are currently considering the feasibility of higher housing numbers in the West Midlands region, in response to a report by the National Housing and Planning Advice Unit (NHPAU). This work will not be completed until at least 2009, so it is impossible to know what this would mean for Herefordshire. Nevertheless, taking the NHPAU’s “high point” target and distributing the extra

<sup>8</sup> Net international migration to Herefordshire is relatively low (see appendix), so it is assumed not to be affected by housing supply.

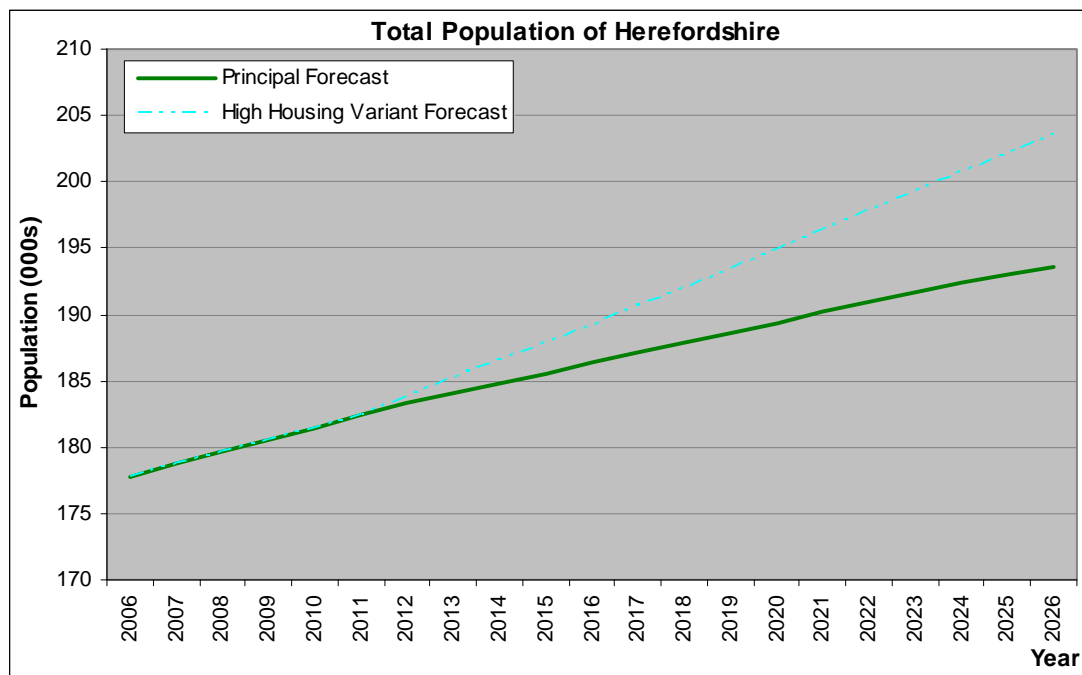
across the region in the same proportions as the current allocations would suggest the county could have 20,880 new dwellings (net) over the twenty years of the RSS.

A 'high housing' forecast has been produced by adjusting the migration rates assumed for the principal population projection to meet this higher level of housing supply.

Again, the impact of this on age-groups within the population will be considered in detailed reports about particular age-groups; the difference between the total population of Herefordshire under the 'high housing' and principal forecasts is illustrated in Figure 10.

There is no difference to 2011 because housing supply under the UDP is already determined, but the extra 4,280 dwellings under the 'high housing' variant forecast would suggest a much faster rate of growth in the county's population from this point onwards. An average annual growth of 0.8% from 2011, double that expected under the principal forecast, would lead to a total population of 203,500 by 2026. This is 5.1% higher than the principal forecast of 193,600.

Figure 10: Total population of Herefordshire under principal and 'high housing' variant population forecasts



## **APPENDIX – SUMMARY OF METHODOLOGY**

### **Overview**

Herefordshire Council's Research Team produces population projections and forecasts for the county of Herefordshire using the cohort survival method, with calculations performed by Manchester University's POPGROUP software.

The cohort survival method is described in the steps below:

1. take the population at the start of a year;
2. apply appropriate age- and sex-specific fertility, mortality and migration rates or counts;
3. add calculated births and in-migration; subtract deaths and out-migration;
4. age population on a year
5. repeat from step 1 until the end of the period.

Population *projections* are based on recent local and nationally predicted trends in births, deaths and migration – i.e. estimates of what could reasonably be expected to happen to the population of an area if recent trends were to continue, without taking into account any known local factors that may affect these trends in future.

Population *forecasts* for Herefordshire use these same assumptions, but also take into account anticipated housing provision over the course of the forecast period, by constraining migration to and from the rest of the UK to meet housing supply.

All counts and rates used in the modelling process are either published by the Office for National Statistics (ONS) or the Department for Communities and Local Government (CLG), or are derived from such data.

The projections and forecasts are based on the concept of 'usual residence' used for all ONS population estimates and projections, where a person is counted in the population of the area in which they usually live. As population estimates are based on the national census, this is self-defined to some extent, but of particular interest for Herefordshire is that:

- Students are counted at their term-time address rather than their family home; and
- An international migrant is defined, as per the UN definition, as someone who changes their country of residence for at least a year.

## **Summary of Principal Assumptions for Herefordshire Population Forecasts**

### **Fertility**

The age-specific fertility rates follow current (i.e. 2006-based) national assumptions regarding future trends in fertility, with local age-specific differentials applied to reflect slightly different patterns of births in Herefordshire (i.e. slightly more births to women of younger ages – except teenagers – and slightly fewer to older women) – see table A1.

Table A1: Observed births in Herefordshire as % of expected from E&W rates applied to county population, average 2004-2006

Age	%
Under 20	81.6%
20-24	109.3%
25-29	109.5%
30-34	100.8%
35-39	94.2%
40+	92.0%

### **Mortality**

Age-sex-specific mortality rates follow current national assumptions (i.e. 2006-based) regarding future trends in mortality, with local differentials applied to the rates for ages 55+ to reflect slightly different patterns of deaths by age and sex in Herefordshire (i.e. fewer deaths than would be expected from national rates for all age-sex groups except males aged 85+) – see Table A2.

Table 2: Observed deaths in Herefordshire as % of expected from E&W rates applied to county population, average 2004-2006

Age	Male %	Female %
55-64	84.7%	73.9%
65-74	84.5%	86.4%
75-84	93.6%	84.4%
85+	104.5%	97.2%

### **International Migration**

It is assumed that Herefordshire will receive the same proportion of net immigrants to the UK as it has on average in the two years for which data is available since the expansion of the European Union in May 2004 (i.e. mid-2004 to mid-2006), and that these net migrants will have the same age-sex structure as observed over those years.

The assumption is then that overall net immigration to Herefordshire will follow the overall trend predicted for the UK in the most recent national projections (i.e. 2006-based).

The average annual net flows are shown in Table A3; the total net in-flow is small but there was a net *inflow* of younger adults and a net *outflow* of older adults and children. Due to the small numbers involved, there is little change in these annual age-sex specific numbers throughout the projection period.

Table A3: Average annual net immigration to Herefordshire by age & sex (mid-04 to mid-06)

Age	Male	Female
0-4	-5	4
5-14	-1	-9
15-24	+32	+31
25-34	+20	+20
35-44	+2	+3
45-54	-9	-14
55-64	-13	-16
65-74	-7	-16
75+	-1	-1
Total	19	3

Source: ONS Population Estimates Unit, Crown Copyright.

Note: Data provided on request – figures are NOT National Statistics & are supplied unrounded to facilitate understanding of population estimates.

### Migration within the UK

The principal age-sex-specific 'propensity to migrate' (in and out) rates are based on average migration flows between Herefordshire and the rest of the UK over the three years mid-2003-04 to mid-2005-06 – see Table A4.

These rates are adjusted to constrain a *projection* of the population to anticipated housing supply to create a *forecast*.

Table A4: Propensity to migrate to Herefordshire from rest of UK rates by age/gender (per thousand population)

Age	Net migration from the UK (in minus out)	
	Male	Female
0-4	14.0	14.6
5-9	7.2	9.1
10-14	0.6	0.7
15	8.8	8.6
16-17	4.1	4.4
18-19	-80.0	-82.7
20-24	-6.2	-9.3
25-29	-6.2	-5.2
30-34	6.5	8.6
35-39	10.1	11.3
40-44	8.9	9.3
45-49	8.7	9.3
50-54	5.8	7.1
55-59	11.1	11.7
60-64	14.7	14.6
65-69	11.0	11.6
70-74	4.5	4.6
75+	0.7	2.6

Source: HC Research Team based on ONS internal migration estimates and mid-year population estimates, for the three years 2003-04 to 2005-06. ONS data is Crown Copyright.

### Household formation assumptions

The number of households that would be expected from a population projection or forecast is calculated by applying Herefordshire-specific “household representative rates” assumed by the Department for Communities and Local Government in their 2004-based household projections.<sup>9</sup>

Summary rates for all household types are shown in Table A4; in practice different rates are applied to estimate the number of representatives of each of five different household types.

**Table A4: Proportion of private household residents who are representatives of any type of (unconcealed)<sup>10</sup> household**

Age-group	2006		2011		2026	
	Male	Female	Male	Female	Male	Female
15-19	3%	3%	3%	4%	3%	5%
20-24	28%	16%	28%	17%	30%	18%
25-29	64%	23%	64%	24%	65%	26%
30-34	80%	23%	80%	25%	80%	28%
35-39	91%	21%	92%	23%	93%	28%
40-44	91%	21%	92%	23%	92%	28%
45-49	93%	22%	93%	24%	93%	26%
50-54	95%	20%	95%	22%	94%	26%
55-59	96%	20%	96%	22%	96%	27%
60-64	97%	23%	97%	24%	97%	26%
65-69	98%	27%	98%	27%	98%	28%
70-74	98%	39%	98%	37%	98%	36%
75-79	98%	53%	99%	49%	99%	43%
80-84	97%	66%	98%	63%	98%	55%
85+	94%	76%	94%	75%	95%	70%
Total 15+	67%	22%	69%	24%	73%	27%

Source: derived from supporting data for (original) 2004-based household projections for Herefordshire, CLG; figures are rounded to 0 d.p. for ease of reading. NB. For classification purposes, the male of a couple household is always classified as the representative.

<sup>9</sup> Revised 2004-based household projections were published on 28<sup>th</sup> Feb 2008 – too late for consideration in the 2006-based population forecasts. There do not appear to be any changes to the underlying assumptions.

<sup>10</sup> Rates are also provided for ‘concealed’ households, i.e. a household ‘hidden’ within another – e.g. a single mother living with her parents would be classified as a ‘concealed lone parent representative’.