

Craven

Demographic Forecasting Update

Including an addendum with additional scenario analysis

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For the attention of:

Sian Watson

Spatial Planning Manager

(Planning Policy Team)

edgeanalytics

Leeds Innovation Centre | 103 Clarendon Road | Leeds | LS2 9DF

0113 384 6087 | www.edgeanalytics.co.uk

Acknowledgements

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DRAFT

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Introduction

Context & Requirements

- 1.1 Craven District Council is updating its Local Plan, having undertaken a consultation on a revised draft plan in early 2016. Edge Analytics provided a range of demographic scenario forecasts to inform the Local Plan review, with reports produced in January 2015¹ and March 2015².
- 1.2 Included within the range of scenarios was the 2012-based sub-national population projection (SNPP) from the Office for National Statistics (ONS). Household growth assumptions were drawn from the 2008-based, 2011-based and 2012-based household projections from the Department for Communities and Local Government (DCLG).
- 1.3 Forecasts were produced for the district of Craven as a whole, for three sub-district planning areas (North Craven, Mid Craven and South Craven), plus the portion of the Yorkshire Dales National Park (YDNP) that falls within Craven.
- 1.4 Since the previous Craven demographic analysis was produced, a number of new datasets have been published. In May 2016, the ONS 2014-based SNPP was released, followed by the 2014-based DCLG household projections in July 2016. Also available are two years of mid-year population statistics (2014 and 2015) for Craven district³, providing an updated historical time frame from which to draw trend-based assumptions. In addition, a new June 2016 economic forecast from the Regional Economic Model (REM) has been made available.
- 1.5 Following a review of the emerging Local Plan, the Council has requested an update to the scenario evidence for Craven and its four sub-district planning geographies, using the latest demographic statistics available. Forecasts are required for the Craven plan period, 2012–2032.

¹ Craven Demographic Analysis & Forecasts: Assumptions, Methodology & Scenario Results, January 2015

² Craven Demographic Analysis & Forecasts: Evaluating the impact of the 2012-based DCLG household projections. An Addendum to the January 2015 report, March 2014

³ Sub-district populations are only available to 2014 but the analysis will seek to make assumptions at a sub-district level to ensure consistency with the 2015 mid-year figure for Craven district.

Approach

Official Guidelines

- 1.6 The development and presentation of demographic evidence to support local housing plans is subject to an increasing degree of public scrutiny. The NPPF and PPG provide guidance on the appropriate approach to the objective assessment of housing need. Guidance is also provided by the Planning Advisory Service (PAS)⁴, with practical advice on assessing the housing needs and establishing housing targets for an area.
- 1.7 In the objective assessment of need, demographic evidence is a key input. The PPG states that the DCLG household projections should provide the “*starting point estimate of overall housing need*” (PPG paragraph 2a-015). Local circumstances, alternative assumptions and the most recent demographic evidence, including Office for National Statistics (ONS) population estimates, should also be considered (PPG paragraph 2a-017). Evidence that links demographic change to forecasts of economic growth should also be assessed (PPG paragraph 2a-018).
- 1.8 The choice of assumptions used for demographic forecasting has an important impact on scenario outcomes. This is particularly the case when trend projections are considered alongside jobs forecasts. The scrutiny of demographic assumptions is now a critical component of the public inspection process, providing much of the debate around the appropriateness of a particular objective assessment of housing need.

Edge Analytics’ Approach

- 1.9 In accordance with the PPG, Edge Analytics has used POPGROUP (v.4) technology to develop a range of growth scenarios. In each of the scenarios, historical data is included for the 2001–2015 period, with scenario results presented for Craven’s designated plan period, 2012–2032.
- 1.10 The scenario analysis is prefaced with a ‘demographic profile’ of Craven, illustrating its geographical context, its ‘components’ of population change (births, deaths, and migration) and its historical commuting and migration patterns. A sub-district perspective is included to illustrate how demographic change has varied for the four key planning areas since 2001.
- 1.11 The starting point of the scenario analysis is the 2014-based sub-national population projection

⁴ <http://www.pas.gov.uk/documents/332612/6549918/OANupdatedadvicenote/f1bfb748-11fc-4d93-834c-a32c0d2c984d>

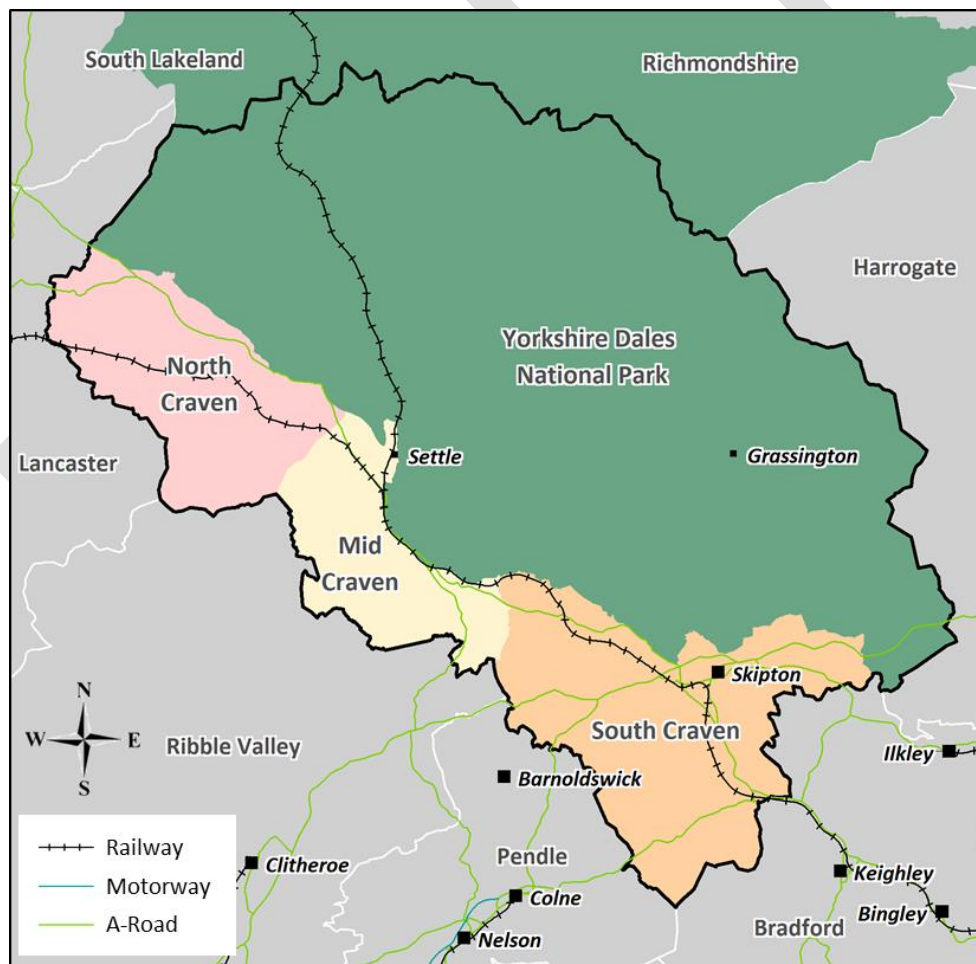
(SNPP) and sub-national household projection for Craven. A number of alternative trend scenarios, using varying migration assumptions, have been developed and are compared to the 2014-based benchmark scenario.

- 1.12 Household and dwelling growth have been estimated using assumptions from the 2014-based DCLG household projection model for Craven. A comparison of household and dwelling growth implied by the earlier 2008-based and 2012-based DCLG household projection models is also included.
- 1.13 The analysis considers the effect of the changing population age structure on Craven's labour force, linking the demographic scenarios to an estimated jobs growth requirement using assumptions on economic activity rates, unemployment and commuting. These are compared to independently-generated jobs forecasts from the REM, both the original forecast from the 2015 demographic analysis (2014 REM), plus a more recent (June 2016 REM) forecast. Sensitivity testing has also been conducted on the assumptions that link population growth to the jobs growth implied by the 2016 REM.
- 1.14 A concluding section summarises the new scenario evidence, with the Appendix to this document providing a summary of the POPGROUP methodology and further detail on key data and assumptions used in the development of the forecasts.

2 Area Profile

Geography

- 2.1 Craven is a predominantly rural district with main settlements at Skipton, Settle and Grassington. The large majority of its geographical area lies within the YDNP. Outside the YDNP, Craven District Council has identified three key planning areas: North Craven, Mid-Craven and South Craven (Figure 1).



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Figure 1: Craven geographical definition

- 2.2 The YDNP covers 68% of Craven, yet accommodates only 18% of Craven’s total population. South Craven is home to 60% of the population, with Mid-Craven and North Craven each having 11% of the district’s total population (Figure 2).

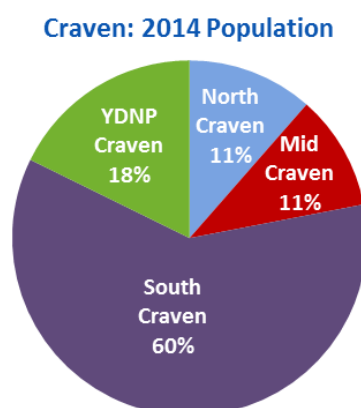


Figure 2: Craven sub-districts’ share of population in 2014 (Source: ONS)

Population Growth Profile

- 2.3 The latest 2015 mid-year population estimate (MYE) for Craven suggests a population of 55,801, a 3.9% increase since 2001. This rate of growth is substantially lower than the county, regional, and England averages of 5.6%, 8.3%, and 10.8% respectively (Table 1).

Table 1: Craven population change comparison (source: ONS)

Area	Population Change 2001–2015			
	2001	2015	Change	% Change
Craven	53,706	55,801	2,095	3.9%
North Yorkshire	570,094	602,277	32,183	5.6%
Yorkshire & the Humber	4,976,643	5,390,576	413,933	8.3%
England	49,449,746	54,786,327	5,336,581	10.8%

- 2.4 Between Censuses, MYEs are derived by applying ‘components of change’ (i.e. counts of births and deaths and estimates of internal and international migration) to the previous year’s MYE.
- 2.5 The MYEs from 2002–2010 were ‘rebased’ to align with the 2011 Census, ensuring the correct transition of the age profile of the population over the 2001–2011 decade. At the 2011 Census, Craven’s resident population was 55,409, a 3.3% increase from 2001. The 2011 Census population count proved to be *higher* than that suggested by the trajectory of growth from the

previous MYEs. As a result, the revised, final MYEs are *higher* than the previous MYEs (Figure 3).

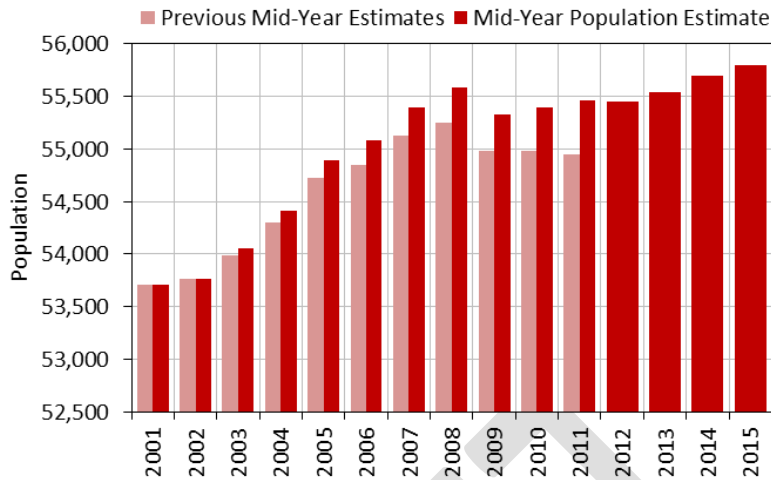


Figure 3: Craven mid-year population estimates, 2001–2015

2.6 The rebasing of the MYEs involved the recalibration of the components of change for 2001/02–2010/11. After methodological changes and errors in the components were accounted for, the remaining difference between the expected 2011 mid-year estimate and the 2011 Census-based mid-year estimate is referred to as ‘unattributable population change’ (UPC). The ONS has not attributed UPC to any one component-of-change, however, suggesting that it may be due to the Census estimates themselves, international migration estimation or internal migration counts.

2.7 In Craven’s case, the impact of the UPC component was a very small uplift to each mid-year population estimate, averaging 167 per year to 2011 (Figure 4).

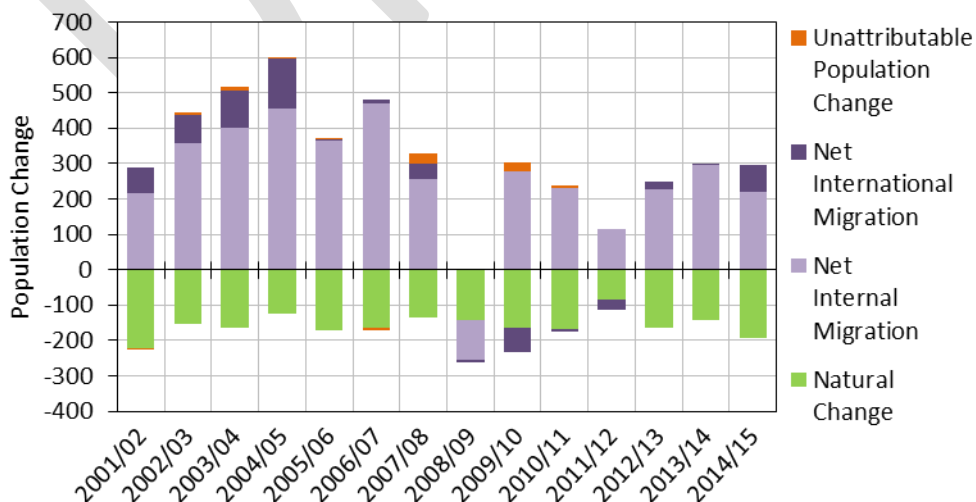


Figure 4: Mid-Year Population Estimates (Source: ONS)

- 2.8 Between Censuses, births and deaths are accurately recorded in vital statistics registers and provide a robust measure of 'natural change' (the difference between births and deaths) in a geographical area. Given that births and deaths are robustly recorded, and assuming that the 2001 Census provided a robust population count, the 'error' in the historical MYEs was most likely due to the difficulties associated with the estimation of migration.
- 2.9 Internal migration (i.e. migration flows to and from other areas in the UK) is adequately measured using data from the Patient Register (PR), the National Health Service Central Register (NHSCR) and Higher Education Statistics Agency (HESA), although data robustness may be lower where there is under-registration in certain age-groups (young males in particular).
- 2.10 It is most likely that the UPC component is associated with the mis-estimation of international migration, i.e. the balance between immigration and emigration flows to and from Craven. Based on this assumption, a fourteen-year profile of the 'components of change' is presented for Craven (Figure 5).

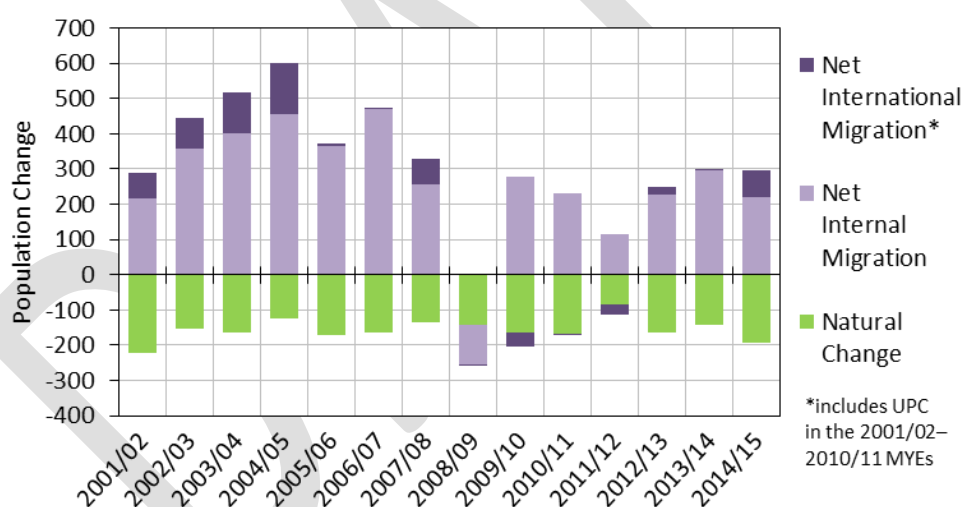


Figure 5: Craven components of population change 2001/02 to 2014/15 including UPC in the 2001/02 to 2010/11 international migration component (source: ONS)

- 2.11 Craven's population change since 2001/02 has been driven by a combination of natural change, internal and international migration. Natural change, the difference between births and deaths only, has historically resulted in a population decline (an excess of deaths over births) a reflection of Craven's relatively old age profile.
- 2.12 Internal migration (i.e. the exchange of migrants between Craven and other parts of the UK) has had the most significant impact on population growth, but with a significant fall in net migration

in 2008/09. Net flows have recovered since but not to the levels experienced pre-2008. International migration is estimated to have had a less significant impact upon Craven's population growth, varying between a small positive and negative impact since 2011.

Age-Structure

2.13 When considering future housing needs and the size and shape of the resident labour force, the age structure of Craven's population is a key factor. Figure 6 compares Craven's age profile to its county, region, and England in total, using the 2014 base year of the latest ONS sub-national projections.

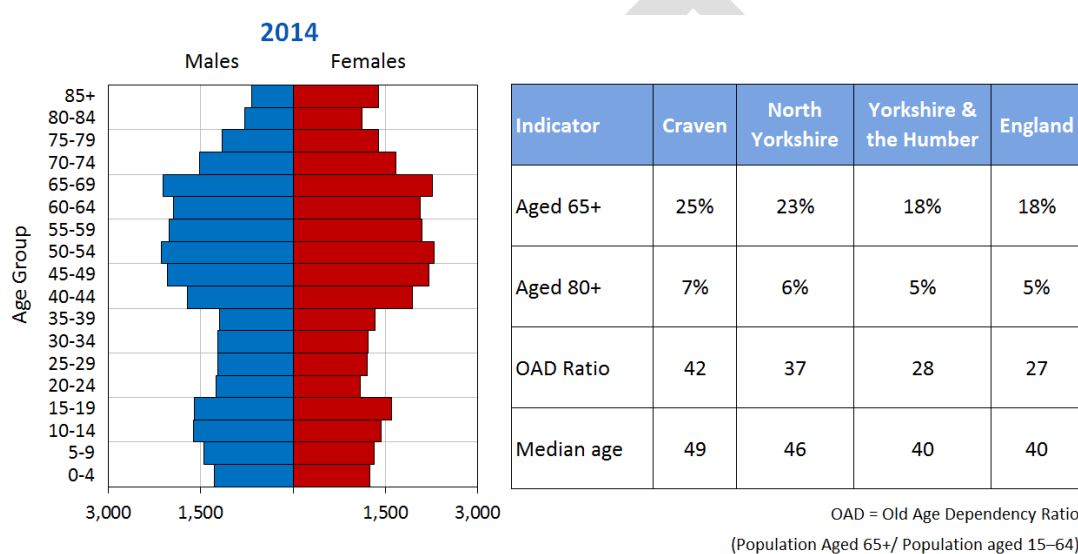


Figure 6: Craven, population age structure (source: ONS)

2.14 Craven and North Yorkshire in total have a substantially older age profile than the Yorkshire & the Humber region and England, with 23–25% in the 65+ age-range, and a median age of 46–49. Craven has an Old Age Dependency ratio of 42, compared to a national average for England of 27. This means that the 65+ population of Craven is equivalent to 42% of the 15–64 age-group population, compared to just 27% across England in aggregate.

Internal Migration

2.15 Internal migration statistics measure the in-flows and out-flows of population to and from Craven, from and to elsewhere in the UK. The average annual growth of Craven's population as a result of internal migration exchanges has been approximately +269 per year since 2001/02 (Figure 7). This illustration reflects the 'components-of-change' profile but also presents the

separate in-migration and out-migration flows that make up the net total. During the 2001/02–2014/15 time period, internal in-migration averaged 2,772 per year, with internal out-migration averaging 2,502 people per year. Whilst out-migration has remained relatively stable during the last fifteen years, it was a sharp fall in the level of in-migration to Craven that led to the drop in the net migration effect after 2007/08.

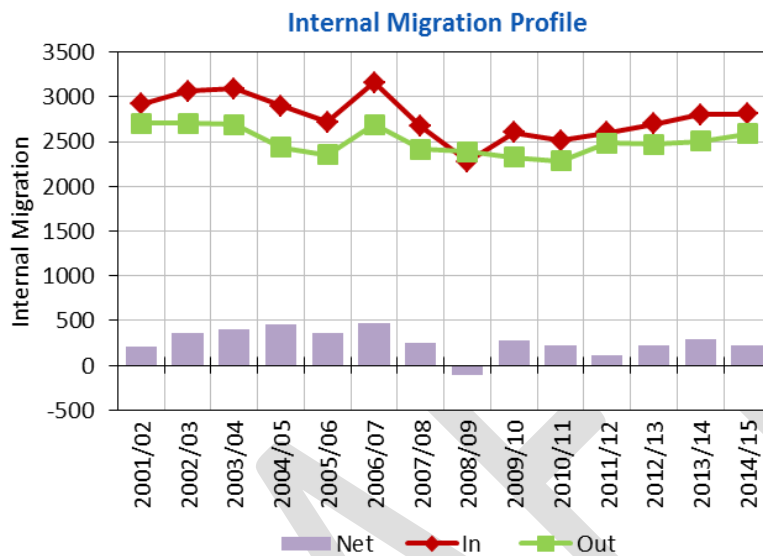


Figure 7: Craven internal migration profile, 2001/02–2014/15 (source: ONS)

2.16 In terms of migration linkages between Craven and surrounding areas, the largest *positive* net exchanges (i.e. a higher inflow than outflow) have been with the Bradford local authority district (Figure 8). For the net *outflow* exchange, the dominant flow has been between Craven and Lancaster (Figure 8).

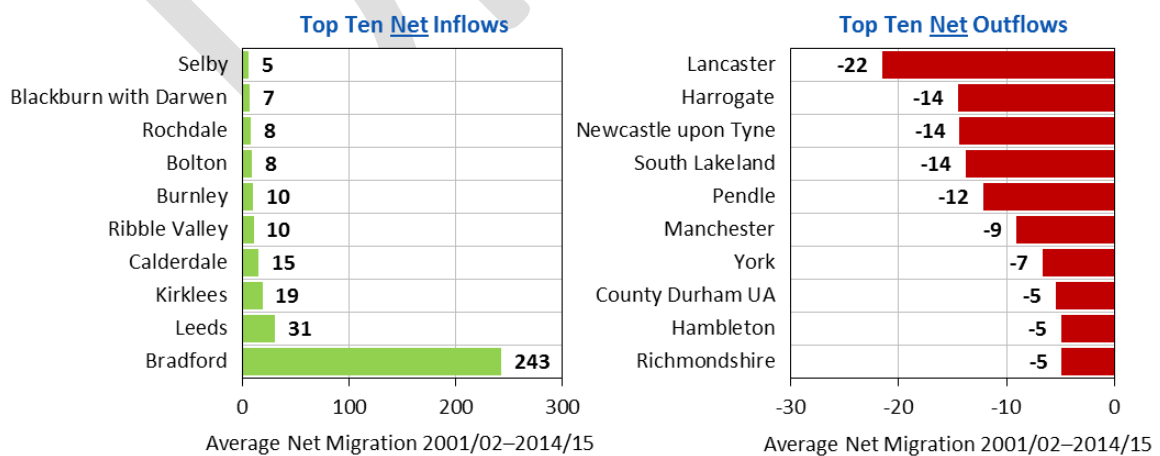


Figure 8: Top-10 internal migration net inflows & outflows, average 2001/02–2014/15 (source: ONS)

2.17 The age profile of migration reveals that Craven has experienced a net inflow in all age-groups with the exception of 15–19 year-olds and 25–29 year-olds (Figure 9). The large net outflow at age 15–19 will be associated with student moves to higher education, but there is no corresponding return flow in the 20–24 age-range.

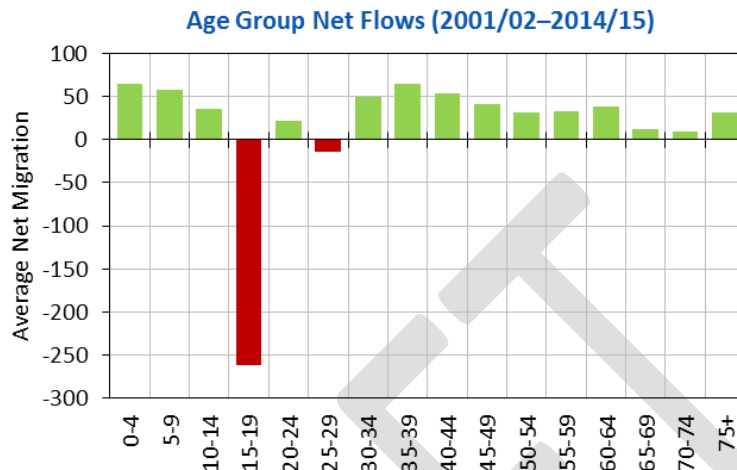
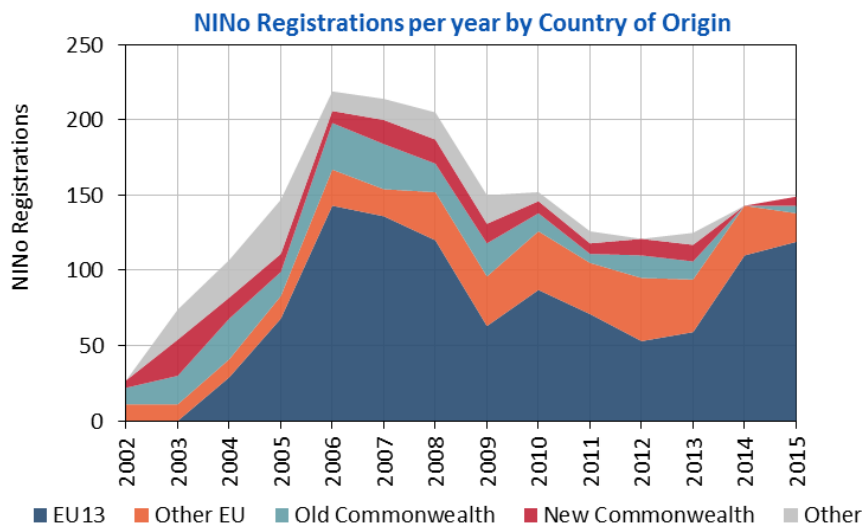


Figure 9: Craven internal migration age profile, 2001/02–2013/14 (source: ONS)

International Migration

2.18 National Insurance Number (NINo) registrations provide an indication of the number of foreign nationals that have registered to work in Craven since 2002 (Figure 10).



EU13 refers to countries that joined the European Union in 2004. Other EU refers to all other European Union countries

Figure 10: NINo Registrations in Craven, 2002–2015 (Source: DWP)

- 2.19 These data do not align especially well with ONS components of change as they are a record of immigration only (there are no associated de-registration statistics); they only include those registering for work (excluding dependents) and do not provide any evidence on the 'length-of-stay' of each migrant. However, they do provide a useful picture of the likely trend in immigration and an indication of the country-of-origin of migrants locating themselves in Craven.
- 2.20 The large majority of Craven's NINo-registrations have been associated with European migrants, particularly from the countries that have joined the EU since 2004. 2012 was a low-point for registrations, but numbers have increased since, with a higher proportion of migrants from Bulgaria and Romania since 2013.

Commuting Flows

- 2.21 With regards to travel-to-work patterns, the 2011 Census recorded 27,600 workers aged 16–74 living within Craven (Table 2) and 27,294 workers aged 16–74 working within Craven (Table 3).

Table 2: Craven 2011 Census commuting flows: workers (ages 16–74)

Where do people who <u>live</u> in Craven work?			Source: ONS
Live	Work	Number	%
Craven	Craven	18,412	66.7%
	Bradford	3,953	14.3%
	Leeds	1,081	3.9%
	Pendle	593	2.1%
	Lancaster	516	1.9%
	Other	3,045	11.0%
Workers		27,600	100%

Table 3: Craven 2011 Census commuting flows: employment (ages 16–74)

Where do people who <u>work</u> in Craven live?			Source: ONS
Live	Work	Number	%
Craven	Craven	18,412	67.5%
Bradford		4,259	15.6%
Pendle		1,710	6.3%
Other		2,913	10.7%
Jobs		27,294	100%

- 2.22 Approximately 66.7% of Craven's labour force both lives and works within the district, with 14.3% commuting out to neighbouring Bradford, and the remaining 19% commuting elsewhere (Table 2). In terms of employment, the majority of Craven's jobs are taken up by the local workforce

(67.5%), with 15.6% of workers commuting from Bradford, and a further 17.0% from elsewhere (Table 3).

2.23 Data from successive Censuses reveal that the employed workforce in Craven is similar in size to the number of resident workers. This balance has changed over the 2001–2011 decade with a slightly smaller increase in the number of resident workers (+1,851) compared to jobs (+3,236) (Table 4). In 2011, Craven had a small outward net commuting ratio of 1.01, compared to a slightly higher outward net commuting balance of 1.07 in 2001.

Table 4: Craven Census travel-to-work commuting ratios, ages 16–74 (source: ONS)

Craven		2001 Census	2011 Census
Workers	<i>a</i>	25,749	27,600
Jobs	<i>b</i>	24,058	27,294
Commuting Ratio	<i>a/b</i>	1.07	1.01

Note: 2001 data from Census Table T101 – UK Travel Flows ; 2011 data from Census Table WU02UK - Location of usual residence and place of work by age .

Sub-district Growth Profile

2.24 Craven's growth since 2001 has been a composite of different levels of population change across the four sub-district areas (Figure 11) (note: at the sub-district level, population estimates are available to mid-year 2014 only).

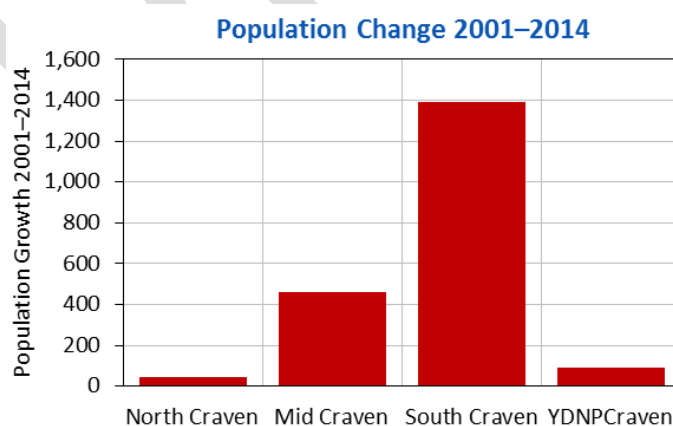


Figure 11: Craven sub-district population change 2001–2014

2.25 With 60% of the district's population, South Craven has seen the largest population growth in

absolute terms, equivalent to a 4% rise 2001–2014. Mid-Craven’s population has grown by a smaller amount but more significantly in percentage terms (over 8%), with all of its growth concentrated in the period before 2008. North Craven and the YDNP are populations have remained relatively stable in comparison (Figure 12).

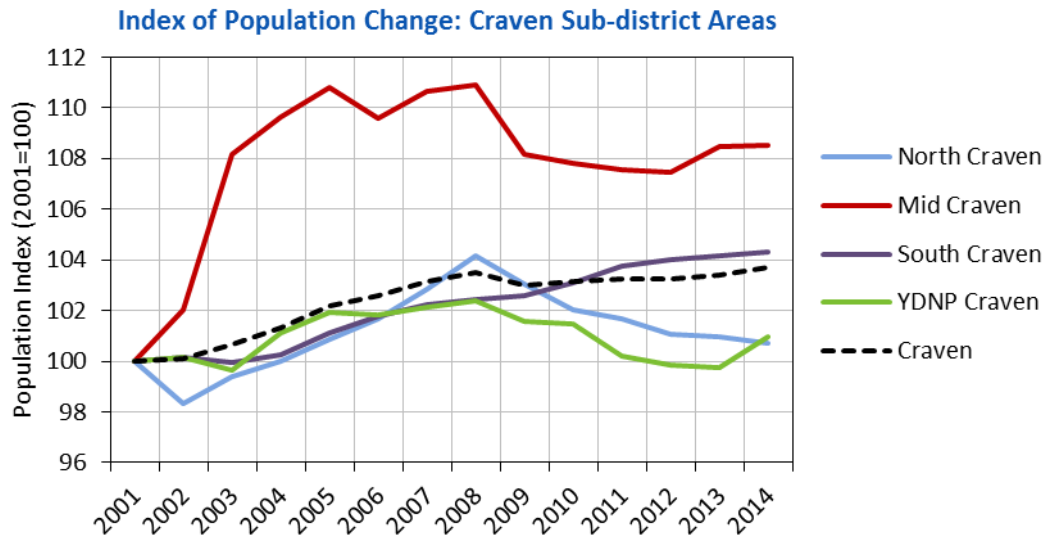


Figure 12: Craven sub-districts: index of population change 2001–2014

2.26 The components of population change illustrate how net migration and natural change have contributed to population growth in each of the four sub-district areas (Figure 11). All areas have experienced a net loss due to natural change, with an excess of deaths over births. Population change has been driven by net in-migration, linked to housing growth, particularly in South Craven.

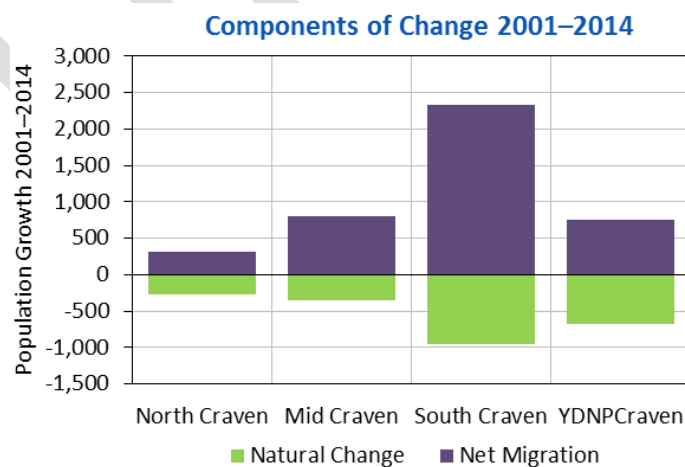


Figure 13: Craven sub-district components of population change 2001–2014

3 Official Projections

- 3.1 In this section, the latest population and household projections from the ONS and the DCLG are considered. Together with Section 2, this section presents the context for the development of a range of alternative growth scenarios, detailed in Section 4.

Official Statistics

- 3.2 In the absence of a population register, the UK continues to rely on the ten-yearly Census for a definitive count of population within its constituent local authority areas. Between Censuses, MYEs are calculated, using data on births, deaths, internal and international migration to quantify annual growth (Figure 14).

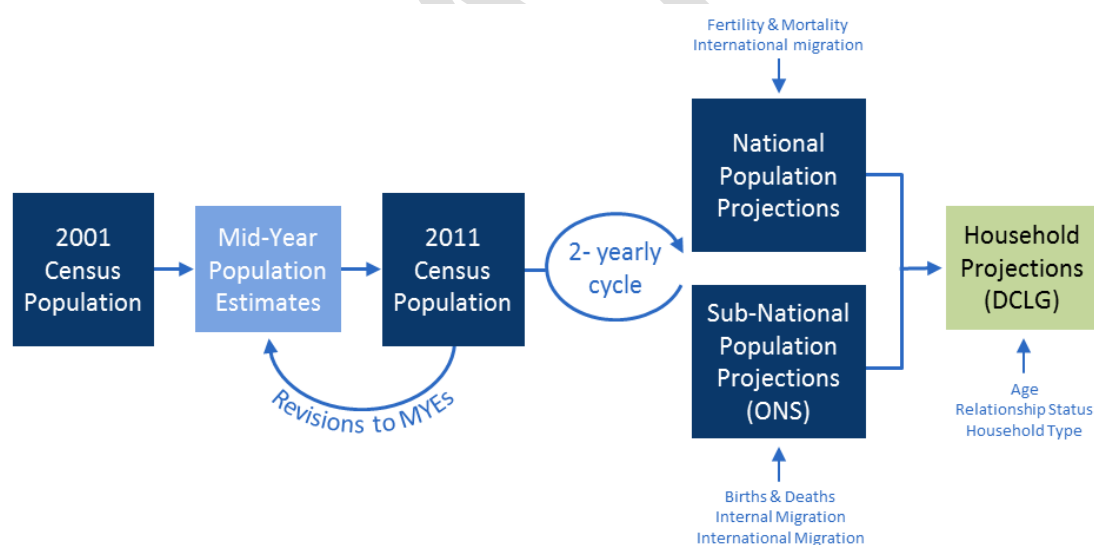


Figure 14: Official Statistics – population and households

- 3.3 Every two years ONS publishes its national population projections, setting key assumptions on the long-term effects of fertility, mortality and international migration to estimate population growth outcomes for England, Wales, Scotland and Northern Ireland. The 2014-based *national* projection was released in October 2015⁵.

⁵ <http://www.ons.gov.uk/ons/rel/npp/national-population-projections/2014-based-projections/index.html>

- 3.4 The national projection informs the sub-national population projections (SNPPs) for English local authorities, also published on a bi-yearly cycle. The latest, 2014-based SNPPs use a combination of national and local assumptions on births, deaths and migration to formulate a 25-year projection for each local authority area.
- 3.5 The SNPPs provide the key demographic input to the DCLG household projections. The latest 2014-based household projection model provides a 25-year projection of household growth in each of the English local authorities.
- 3.6 The PPG states that the DCLG household projections should provide the “*starting point estimate of overall housing need*” (PPG paragraph 2a-015). The remainder of this section considers the 2014-based SNPP and the 2014-based DCLG household projection for Craven, providing the context for complementary scenario analysis in Section 4.

ONS Sub-national Population Projection

- 3.7 In the development and analysis of population forecasts, it is important to benchmark any growth alternatives against the latest ‘official’ population projection. The most recent official subnational population projection is the ONS 2014-based SNPP, released in July 2016. These projections use demographic assumptions derived from a pre-2014, 5–6 year historical period in combination with national assumptions on fertility, mortality and international migration⁶.
- 3.8 Figure 15 presents the ONS population projections series for Craven. Under the latest, 2014-based SNPP, the population of Craven is expected to increase by 2,948 over the 25-year projection period (2014–2039), an increase of 5.3%.
- 3.9 This rate of growth is *lower* than that estimated by each of the previous projections. The 2010-based and 2012-based outcomes have slightly higher rates of growth, whereas projections prior to 2008 have substantially higher growth rates, driven primarily by inappropriate measures of international migration that have now been superseded by new and improved evidence.

⁶<http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2014basedprojections>

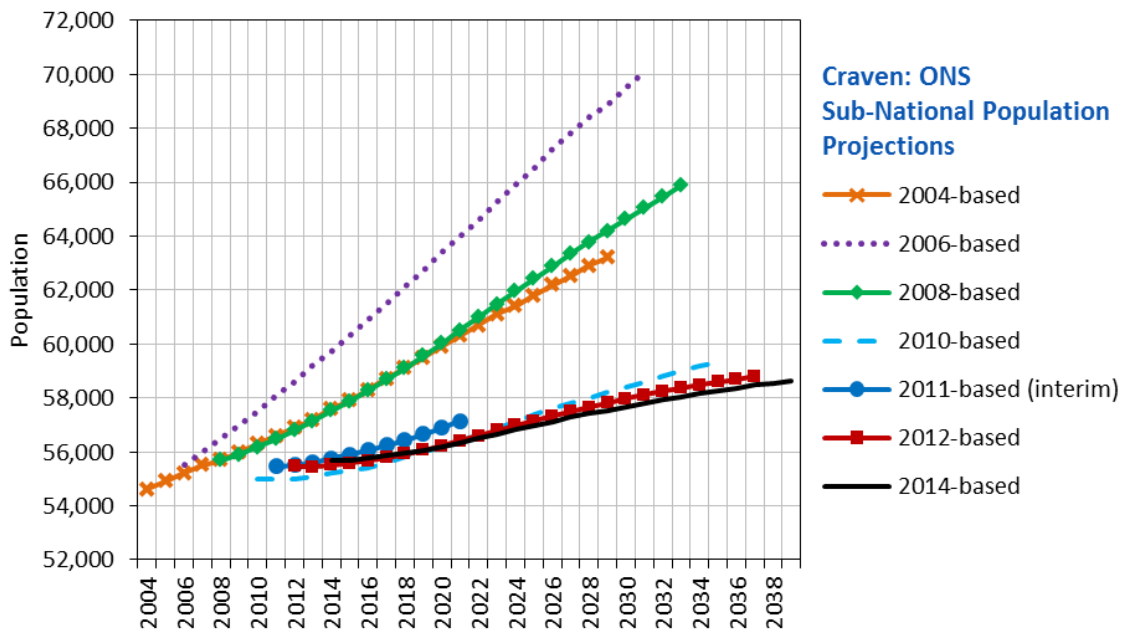


Figure 15: Official Projections for Craven (Source: ONS)

3.10 The rate of population growth implied by the 2014-based SNPP for Craven is relatively consistent with that estimated for the county of North Yorkshire but significantly lower than for the Yorkshire region and England in total (Table 5).

Table 5: SNPP-2014 growth comparisons (Source: ONS)

Areas	Population			
	2014	2039	Change	% Change
Craven	55,696	58,644	2,948	5.3%
North Yorkshire	601,536	631,069	29,533	4.9%
Yorkshire & the Humber	5,360,027	5,908,106	548,079	10.2%
England	54,316,618	63,281,522	8,964,904	16.5%

3.11 The components of population change that underpin the 2014-based projection for Craven are presented in Figure 16, with the historical components of change for 2001/02 to 2013/14 included for comparison. Internal migration is projected to be the dominant and increasing driver of population growth over the projection period. As the population ages, natural change is projected to have an increasingly negative impact on population growth throughout the SNPP projection period, with international migration contributing a small annual net loss.

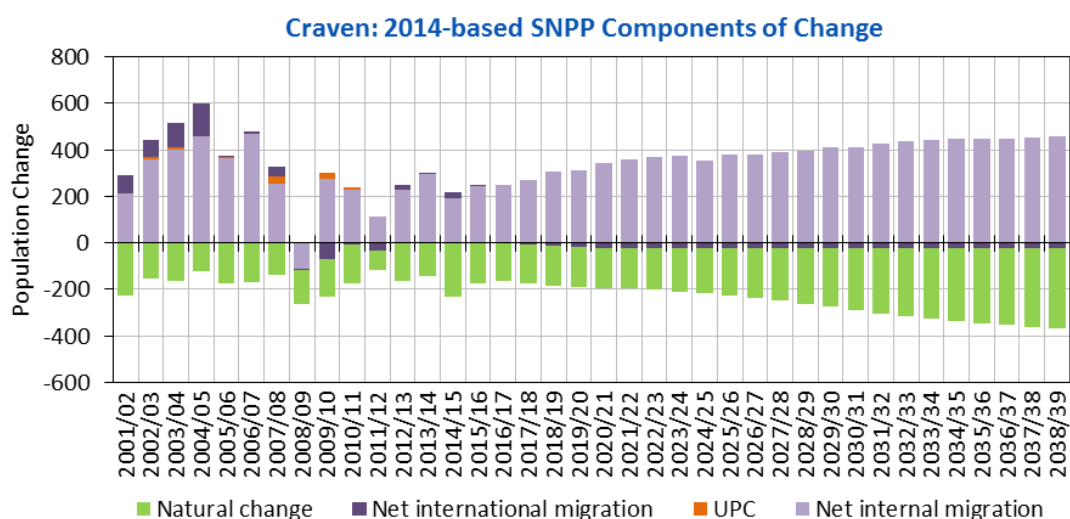


Figure 16: Historical and 2014-based SNPP components of change (Source: ONS)

3.12 To illustrate how the ONS assumptions on demographic change in Craven compare with the historical evidence, the annual average natural change, plus net internal and international migration change for the 2014-based projection are compared to 6-year and 13-year historical averages (Table 6).

Table 6: Craven 2014-based SNPP components comparison (Source: ONS)

Component of Change	Historical		Projected
	6-year average (2008/09–2013/14)	13-year average (2001/02–2013/14)	2014-based SNPP average (2014/15–2038/39)
Natural Change	-144	-155	-238
Net Internal Migration	172	273	372
Net International Migration	-9	35	-16
Total Net Migration	163	308	356
UPC*	6	7	-

* UPC is only applicable to the years 2001/02 to 2010/11

3.13 The negative influence of natural change upon population growth is reflected in an SNPP average annual assumption that is higher than both the short-term 6-year average and longer-term 13-year average. The projected effect of internal migration in the 2014-based SNPP is estimated at a level that also exceeds the average for both the six-year and thirteen-year periods preceding 2014, with an annual net inflow of +372 per year. International migration is projected to result in a small net emigration over the 25-year period, which is consistent with the historical evidence for the last six years.

DCLG Household Projection

- 3.14 In the evaluation of housing need, the PPG states that the DCLG household projections “*should provide the starting point estimate of overall housing need*” (PPG paragraph 2a-015). The 2014-based household projection model, which is underpinned by the 2014-based SNPP, was released by the DCLG in July 2016, superseding the 2012-based household projection model.
- 3.15 The methodological basis of the new 2014-based model is consistent with that employed in the previous 2008-based and 2012-based household projections. A ‘two-stage’ methodology has been used by DCLG. ‘Stage One’ produces the national and local projections for the total number of households by age-group and relationship status group over the projection period. ‘Stage Two’ provides the detailed household type breakdown by age.
- 3.16 The 2014-based household headship rates (also referred to as household representative rates) have changed little from the 2012-based model, with only small adjustments made to account for new evidence arising from the latest Labour Force Survey (LFS) extracts. As a result, the 2014-based household projections differ from the 2012-based versions primarily on the basis of a different underpinning population projection
- 3.17 The 2014-based DCLG household projection model for Craven, underpinned by the 2014-based SNPP, estimates that the number of households will increase by 2,664 over the 2014–2039 projection period, equivalent to an additional 107 households per year, compared to 127 per year under the 2012-based model (Figure 17).

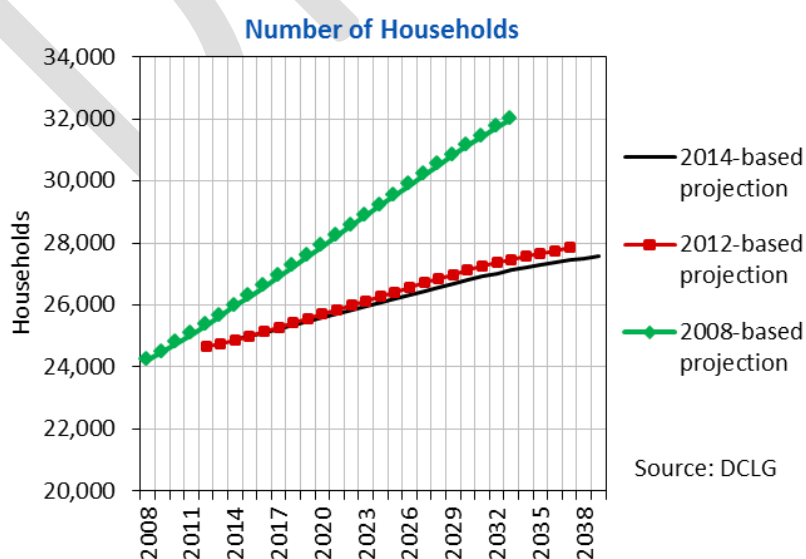


Figure 17: Household growth 2014 based DCLG household projections for Craven

- 3.18 A significantly larger population growth expectation in the 2008-based household projection, coupled with household formation rates that suggest a more rapid reduction in average household size, resulted in an average annual household growth estimate of 311 per year under the 2008-based model alternative.
- 3.19 The DCLG household projection, underpinned by the latest ONS population projection, provides the 'starting point' in the assessment of housing need (PPG paragraph 2a-015). For the 2014–2032 projection period (the Craven plan period, excluding the historical years 2012–2013), the 2014-based household projection model suggests an increase of 2,128 households, approximately 118 per year. Over the same time period, the 2014-based SNPP projects a 4% growth in the population, equivalent to an additional 2,226 people (Table 7).

Table 7: Craven 'starting point' estimates (source: ONS and DCLG)

	Variable	2014	2032	Change	% Change	Average (per year)
2014-based SNPP	Population	55,696	57,922	2,226	4%	124
2014-based DCLG Model	Households	24,902	27,030	2,128	9%	118
	Household Population	54,640	56,474	1,834	3%	102
	Average household size	2.19	2.09	-0.10	-5%	-0.01

- 3.20 As outlined in the PPG, it is appropriate to consider *“alternative assumptions in relation to the underlying demographic projections and household formation rates”* of the local area (PPG Paragraph 2a-017). In the following sections, these 'official' projections are compared to a range of alternative growth scenarios, considering both demographic and economic evidence.

4 Demographic Scenarios

Introduction

- 4.1 There is no single definitive view on the likely level of growth expected in Craven. Ultimately, a mix of economic, demographic and national/local policy issues will determine the speed and scale of change. Whilst the official 2014-based ONS population and DCLG household projections form the 'starting point' of the assessment of housing need, the PPG states that it is appropriate to consider "*alternative assumptions in relation to the underlying demographic projections and household formation rates*" of the local area (PPG Paragraph 2a-017).
- 4.2 In line with the PPG, Edge Analytics has developed a range of alternative demographic scenarios for Craven, using POPGROUP technology. The 2014-based population projection from ONS is presented as the official 'benchmark' scenario, with household growth estimated using household headship rate assumptions from the 2014-based DCLG household projection model. For comparison with this official benchmark, a number of 'alternative trend' scenarios have been developed, in which variant migration and household assumptions have been applied.
- 4.3 The PPG states that the likely change in the number of jobs in an area should be considered, as should the size and structure of the labour force (PPG paragraph 2a-018). Section 5 compares the labour force and job growth implications of the trend scenarios with economic forecasts from the Regional Economic Model (REM), considering key assumptions on Craven's future economic activity rates, level of unemployment and balance of commuting between resident workers and local jobs.

Demographic Scenario Definition

- 4.4 The **SNPP-2014** scenario replicates the 2014-based population projection from ONS. With the application of the household growth assumptions from the 2014-based DCLG household projection model, this provides the 'starting point estimate' for Craven's housing growth analysis.

An **SNPP-2012** scenario is included to illustrate how the latest ONS projection evidence compares to the previous output.

- 4.5 The PPG recommends, as part of the assessment of housing need, that the most recent demographic statistics from ONS and alternative demographic projections should be considered (PPG Paragraph 2a-017). The 2014-based SNPP from ONS is a trend-based projection that uses demographic assumptions based on up to six years historical evidence preceding 2014⁷. Given the unprecedented economic changes that have occurred since 2008, and the differences between the projected 2014-based SNPP data and the historical evidence on population change in Craven, it is appropriate to consider alternative time periods in the derivation of migration assumptions.
- 4.6 Two alternative trend scenarios have been developed which make more explicit use of historical evidence from a period prior to the latest (2015) mid-year population estimates. A **PG Short-Term**⁸ scenario derives its internal migration rates and international migration flow assumptions from the historical period 2008/09–2013/14 (i.e. 6 years, similar to the ONS SNPP approach). A **PG Long-Term** scenario derives its internal migration rates and international migration flow assumptions from a longer 14-year period, 2001/02 to 2014/15. This makes use of the full 2001–2015 historical time series for Craven. These historical time-periods are slightly different to those used in the previous Craven demographic report but reflect the ONS' preference for a 5–6 year period for setting its migration assumptions and the preference for using the longest time-period available for an alternative 'long-term' scenario.
- 4.7 An additional **Natural Change** scenario is presented, in which internal and international migration rates are set to zero from 2015/16. This scenario provides an indication of the degree to which dwelling growth is driven by natural change (the balance between births and deaths) in the absence of migration to and from Craven.

Scenario Results: Craven District

- 4.8 Each of the scenarios has been run using historical MYEs for the 2001–2015 period. Scenario results are displayed for Craven's designated plan period 2012–2032 (Figure 18 and Table 8). The

⁷ <https://www.ons.gov.uk/populationandmigration/populationprojections/methodologies/>

⁸ Note that PG refers to POPGROUP, the demographic forecasting software used to develop the scenario forecasts.

plan period includes three years of historical data (2012/13, 2013/14 and 2014/15), with forecasts derived from a 2015 base year, except for the **SNPP-2012** and **SNPP-2014** scenarios, which retain their 2012 and 2014 base years respectively.

- 4.9 Under the **SNPP-2014** scenario, Craven's population is projected to increase by 4.4% between 2012 and 2032, resulting in an average annual dwelling requirement of +130 per year. Under the assumptions set by the **SNPP-2012** scenario, slightly higher population growth of 5.0% is projected, implying an average annual dwelling requirement of +148 per year. The **PG Short-Term** scenario produces a similar growth outcome to the SNPP scenarios, with a dwelling growth requirement of +140 per year.
- 4.10 With a longer historical period, the **PG Long-Term** scenario results in the highest scenario growth outcome, driven by higher migration growth assumptions from the earlier years of the 2001–2015 historical period. Dwelling growth under the **PG Long-Term** scenario averages +188 dwellings per year.
- 4.11 The **Natural Change** scenario (in which migration is set as zero in each year of the forecast period) highlights the key role of migration in driving population growth in Craven. In the absence of migration, the ageing population profile results in a 4.3% decline in population to 2032, with a reducing dwelling requirement over the forecast period.

Craven: Scenario Results

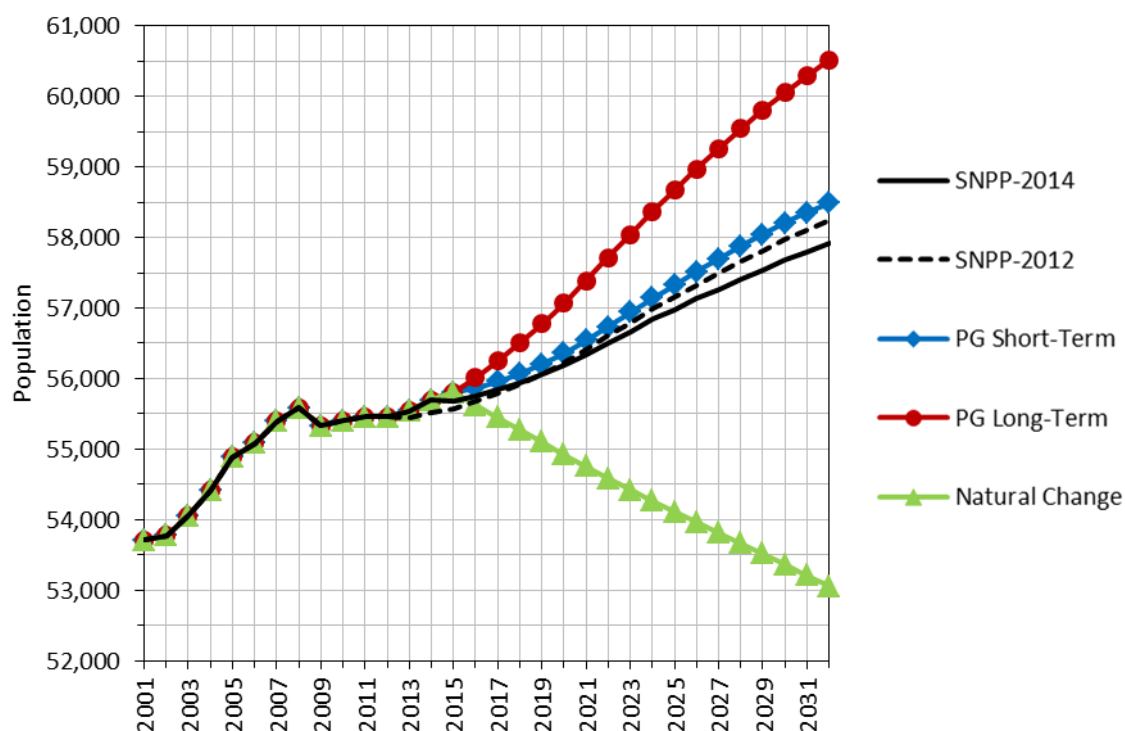


Figure 18: Craven demographic scenario outcomes: population growth 2001–2032

Table 8: Craven demographic scenario outcomes 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG Long-Term	5,060	9.1%	3,418	13.9%	445	188
PG Short-Term	3,035	5.5%	2,540	10.3%	354	140
SNPP-2012	2,781	5.0%	2,686	10.9%	349	148
SNPP-2014	2,465	4.4%	2,359	9.6%	323	130
Natural Change	-2,407	-4.3%	-552	-2.2%	42	-30

Note that household growth has been calculated using the 2014-based headship rates and dwelling growth estimated using a fixed 9.0% vacancy rate.

Headship Rate Sensitivity

- 4.12 In the core scenarios detailed above, the 2014-based DCLG headship rates (HH-14) have been applied, in line with the PPG recommendation to use the latest available household projection assumptions. However, as stated in the PPG, it is appropriate to consider *“alternative assumptions in relation to the underlying demographic projections and household formation rates”* of the local area (PPG Paragraph 2a-017).
- 4.13 For comparison, each of the demographic scenarios has been run using the headship rates from the earlier 2008-based (HH-08) and 2012-based (HH-12) DCLG household models (Table 9).

Table 9: Dwelling growth outcomes using variant headship rates, 2012–2032

Scenario	Average Annual Dwelling Requirement		
	HH-08	HH-12	HH-14
PG Long-Term	226	188	188
SNPP-2012	188	148	148
PG Short-Term	179	140	140
SNPP-2014	169	130	130
Natural Change	10	-30	-30

- 4.14 There is no difference between the dwelling growth outcomes associated with the 2014-based household assumptions and the 2012-based outcomes, reflecting the very minor amendments made by DCLG in its 2014-based model update. In contrast, the 2008-based household assumptions, which assume a faster rate of household formation and a more rapid decline in average household size, result in higher dwelling growth, around 20–30% higher than that estimated by the 2012-based and 2014-based outcomes.

Age Profile

- 4.15 The changing age structure of Craven’s population is an important element when considering future housing needs, and the progression of its labour force. The change in the age profile depends very much on the history of population change, particularly the relative size of successive birth cohorts and continued improvements in life expectancy. The large birth cohorts of the 1940s, 1950s and 1960s are set to have a substantial effect upon local population profiles

and this is reflected in the Craven data. The term ‘ageing population’ generally refers to an increase over time in the share of the population in the older age-groups, specifically 65+.

- 4.16 Using a 2012 base year for comparison, Craven’s projected age profile change under the **SNPP-2014** scenario has been calculated for the plan period 2012–2032 (Figure 19). The red bars indicate where the population at the end of each-time period is *lower* than the 2012 base year. The blue bars indicate where the population is *higher* than the base year.

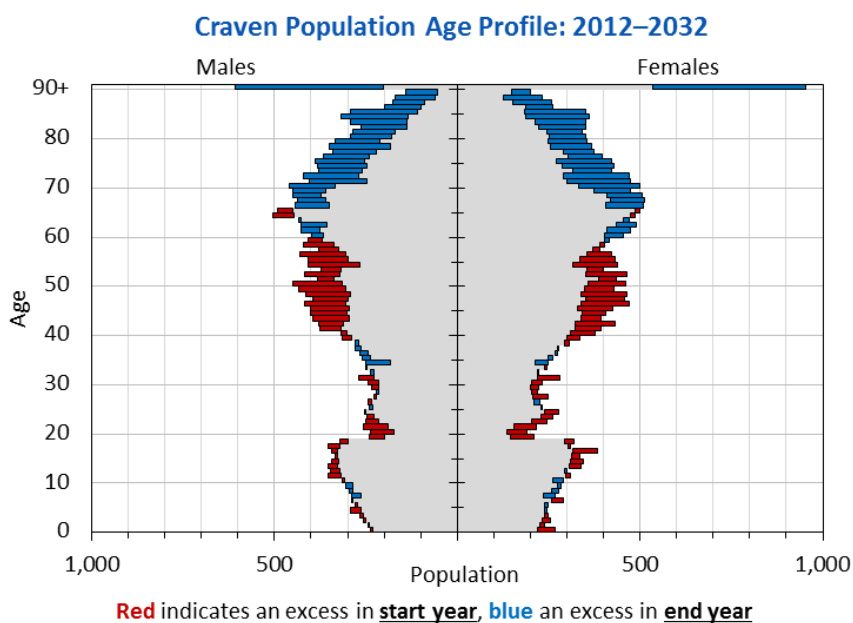


Figure 19: Craven population age profile, 2012–2032 (Source: ONS, POPGROUP)

- 4.17 By 2032, it is estimated that there will have been a significant shift in the shape of the age profile, with those born in the 1940s, 1950s and 1960s moving into the oldest age groups, creating an increased imbalance between those aged 65+ and those in the younger age-groups. This is reflected in the Old Age Dependency (OAD) ratio, which is projected to increase from 39.2 in 2012 to 66.4 by 2032. This means that the 65+ population will be equivalent to 66.4% of those aged 16–64 by 2032, compared to 39.2% at the start of the plan period.

5 Labour Force & Jobs Growth

Introduction

- 5.1 In the assessment of housing need, the PPG states that *“plan makers should make an assessment of the likely change in job numbers based on past trends and/or economic forecasts as appropriate and also having regard to the growth of the working age population in the housing market area”* (PPG paragraph 2a-018).
- 5.2 In POPGROUP, it is possible to derive the size and structure of the labour force and the level of employment that an implied level of population growth could support, through the application of: (1) economic activity rates; (2) unemployment rates; (3) a commuting ratio.
- 5.3 In this section, the labour force and employment growth implications of the demographic scenarios are presented and then compared to two economic forecasts from the REM, the first from a 2014 version of the economic model, the second (June 2016) based on a more recent economic outlook. Sensitivity testing has also been conducted on the assumptions that link population growth to the jobs growth implied by the 2016 REM.

Economic Assumptions

Economic Activity Rates

- 5.4 The **Economic Activity Rates** determine the proportion of the working-age population (aged 16–75+) that are economically active (i.e. the labour force). The labour force includes those who are in work (i.e. ‘workers’) and those who are unemployed. Between the 2001 and 2011 Censuses, economic activity rates in Craven increased in all but the youngest age groups, and most notably in the older age groups (Figure 20). The increase in the economic activity rates has been more pronounced for females than for males.

- 5.5 In the face of unprecedented demographic change due to population ageing, changes to economic activity rates are critical in maintaining an adequately sized local labour force and for maintaining the overall rate of employment. This is particularly the case in Craven where the population is projected to age considerably over the next 25 years, with a larger proportion of the population in the older age-groups compared to the younger, labour-force ages.

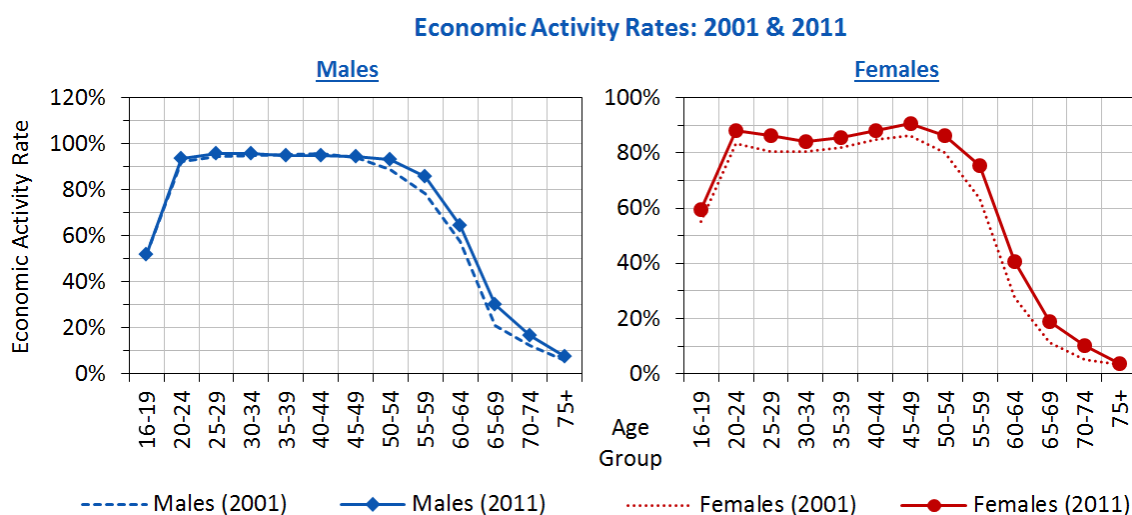


Figure 20: 2001 and 2011 Census economic activity rates for Craven (source: ONS)

- 5.6 Whilst economic activity rates have increased historically, forecasting changes to future economic activity rates is challenging. In reality, it is highly unlikely that future rates of economic activity will remain static. The ageing of the population profile of most local authorities means that the older age-groups increasingly make up a larger proportion of the population. Furthermore, with increased life expectancies and changes to the State Pension Age (SPA), people are remaining in the labour force for longer, resulting in increased participation rates in the older age groups. To at least maintain the current level of *overall* economic activity requires higher economic activity rates generally, but most importantly in the older age-groups.
- 5.7 The Office for Budget Responsibility (OBR) has undertaken analysis of labour market trends in its 2014 Fiscal Sustainability Report⁹. Included within its analysis is a forecast of changing economic activity rates for males and females in the 16–75+ year-old age groups, extending to a long-term 2066 forecast horizon.
- 5.8 In the scenario analysis presented here, economic activity rates for the 60–75+ Craven age groups have been adjusted in line with the OBR forecasts. Economic activity rates for the 16–59

⁹ <http://cdn.budgetresponsibility.org.uk/41298-OBR-accessible.pdf>

age-range remain fixed at their 2011 Census values. The resulting age-specific economic activity rates applied to the Craven scenarios are illustrated in Figure 21 and in the Appendix to this document.

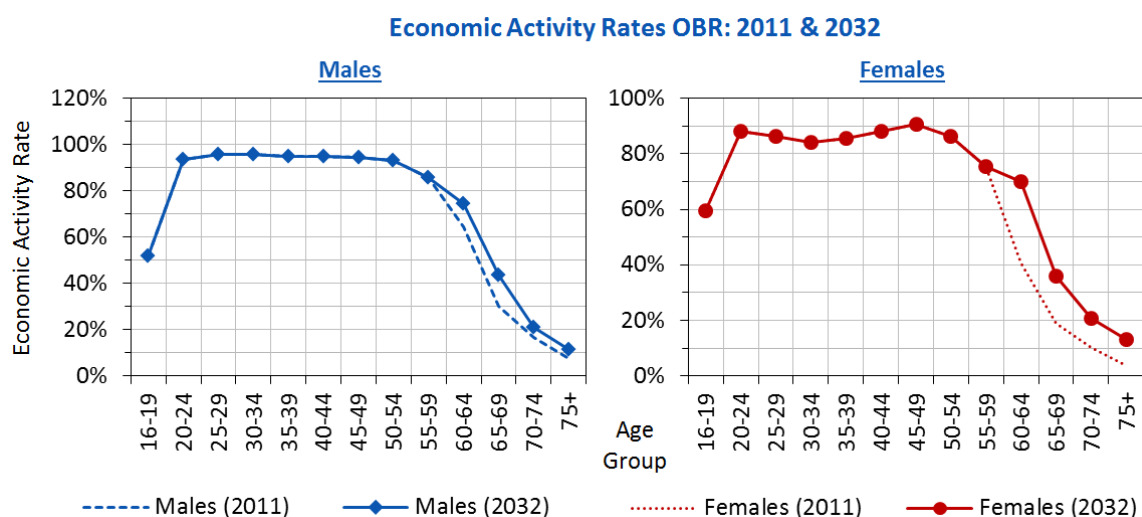


Figure 21: 2011 and 2032 OBR economic activity rates for Craven (Source: OBR)

Unemployment Rate

- 5.9 The **Unemployment Rate** determines the proportion of the labour force that is unemployed (and as a result, the proportion that is employed). The historical unemployment rate profile for Craven has been sourced from the ONS model-based estimates of unemployment. In the scenario modelling presented here, the unemployment rate tracks historical data to 2015, reducing to a 'pre-recession' (2004–2007) average of 2.8% by 2020 (fixed thereafter).

Commuting Ratio

- 5.10 The **Commuting Ratio** determines the balance between the resident number of 'workers' (i.e. the employed labour force) and the number of jobs in an area. A commuting ratio greater than 1.0 indicates a net *out*-commute (i.e. the number of resident workers in an area is greater than the number of jobs). A commuting ratio less than 1.0 indicates a small net *in*-commute (i.e. the number of jobs is greater than the number of workers).
- 5.11 A fixed commuting ratio of 1.01 has been applied in scenarios presented here. This ratio is derived from the 2011 Census Travel to Work and indicates a small net *out*-commute from

Craven. This contrasts to 2001, when Craven had a commuting ratio of 1.07, indicating a larger net *out*-commute (see Table 4 on page 12).

Demographic Scenarios & Labour Force Change

5.12 For each of the Craven demographic scenarios presented in section 4 (excluding the **Natural Change** scenario), economic activity rate, unemployment rate and commuting ratio assumptions have been applied to derive an estimate of the changing size of the labour force that the population growth implies, and the level of employment growth that could be supported under these assumptions (Table 10).

Table 10: Labour Force and jobs-growth outcomes 2012–2032

Scenario	Labour Force (16–75+)				Average Annual Jobs Growth
	2012	2032	Change	% Change	
PG Long-Term	28,951	30,168	1,217	4.2%	92
PG Short-Term	28,951	28,762	-189	-0.7%	25
SNPP-2012	28,951	28,330	-621	-2.1%	4
SNPP-2014	28,951	28,627	-324	-1.1%	18

5.13 The application of the economic assumptions to the **SNPP-2014** scenario estimates that the labour force size will be subject to a slight decline (-324) over the 2012–2032 period, with estimated average annual employment growth of +18 per year, linked to a decline to a pre-recession unemployment rate but no change in the commuting balance. Labour force growth is lower under the **SNPP-2012** scenario.

5.14 The **PG Long-Term** scenario has the highest growth assumptions for migration and results in the largest labour force change (+1,217), supporting an estimated annual employment growth of 92 jobs per year, 2012–2032.

REM Economic Forecasts

5.15 In the consideration of future jobs growth in an area, the PPG states that ‘economic forecasts’ should be considered (PPG paragraph 2a-018). Whilst the employment growth estimates

presented above are derived through the application of economic assumptions to scenarios of demographic change, economic forecasts of employment growth are derived using a different methodology.

- 5.16 Economic forecasts combine a national and regional economic outlook, with data on the sectoral mix of businesses, to produce a forecast of jobs growth for a local area. These forecasts typically incorporate the latest ONS sub-national population projection data but do not adjust the migration assumptions associated with this projection to account for higher or lower population growth to support a forecast level of jobs growth. Instead, economic forecasting models will typically balance jobs and population growth through changes to economic activity and unemployment rates and, in some instances, the commuting ratio.
- 5.17 Employment growth forecasts for Craven have been supplied from the REM, providing trajectories of jobs growth, measured as annual change in the number of FTE employment (Figure 22). The latest REM forecast for Craven is the June 2016 version; the previous 2014 REM is also included here for comparison.

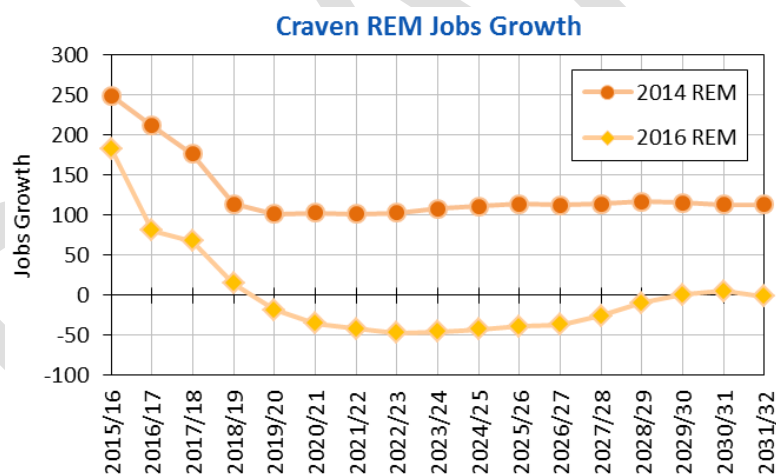


Figure 22: Craven FTE growth forecast (Source: REM, 2014, 2016)

- 5.18 Between 2015/16 and 2031/32 (i.e. over the *forecast* period of the scenarios presented in this report), the level of jobs growth is higher under the earlier 2014 REM forecast, at 128 jobs per year. Under the latest 2016 REM for Craven, the number of jobs is forecast to decrease between 2019 and 2029. The overall effect of this is that the number of jobs increases by only 15 over the 2015/16–2031/32 forecast period.

5.19 Over the 2012–2032 *plan* period, with the inclusion of the MYE statistics for the years 2012–2015 and the application of the three key economic assumptions in these years, the jobs growth implied by the REM forecasts can be compared to that resulting from the demographic scenarios (Figure 23). The 2014 REM forecast results in the highest level of jobs growth, at 147 per year between 2012 and 2032. The REM 2016 forecasts a level of jobs growth between the **PG Short-Term** and the **PG Long-Term** scenarios, at 39 jobs per year.

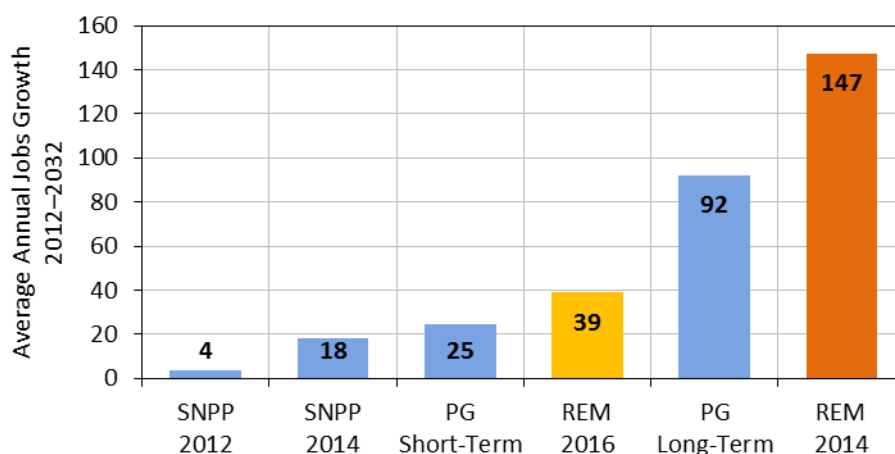


Figure 23: Comparison of average annual jobs growth (2012–2032) from the REM employment forecast (yellow & orange) and the four demographic scenarios (blue)

5.20 With the assumptions that have been made in relation to economic activity, unemployment and commuting, the level of population growth required to support the levels of jobs growth implied by the 2014 REM forecast would be *higher* than that implied by each of the trend scenarios. For the 2016 REM, the level of population growth required to support the level of jobs growth is between that implied by the **PG Short-Term** and **PG Long-Term** scenarios.

Jobs-led Scenarios

5.21 In POPGROUP, the population, household and dwelling growth implications of the REM employment forecast can be evaluated using a ‘jobs-led’ configuration of the POPGROUP forecasting model. In a jobs-led scenario, population growth is linked directly to the change in employment within an area. POPGROUP evaluates the impact of a jobs growth trajectory by measuring the relationship between the number of jobs in an area, the size of the resident labour force and the size of the resident population.

- 5.22 Internal migration is used to balance the relationship between the size of the labour force and the forecast number of jobs. A higher level of net in-migration will occur if there is insufficient resident population and labour force to meet the forecast number of jobs. A higher level of net out-migration will occur if the population is too high relative to the number of jobs.
- 5.23 Key to determining the level of population growth required to meet a defined jobs growth trajectory are the three assumptions on economic activity, unemployment and commuting. With an ageing population (together with a fixed commuting ratio), higher levels of net in-migration would be needed to support the level of jobs growth in the 2014 REM employment forecast. However, if any of the key economic assumptions were to alter, for example, if levels of economic activity were to increase, the required level of population growth needed to support this level of jobs growth would be reduced.
- 5.24 The population and dwelling growth outcomes of the **Jobs-led REM 2014** and **Jobs-led REM 2016** scenarios are compared to the demographic scenario outcomes in Table 11. To support the level of jobs growth implied by the **Jobs-led REM 2014** scenario, a higher level of net migration is required, at an average of 549 people per year. This results in a higher level of population growth, at 13.2% 2012–2032, and the highest dwelling requirement, at 238 per year (using the 2014-based household assumptions). The **Jobs-led REM 2016** scenario forecasts a lower level of jobs growth, resulting in a level of population growth that is slightly higher than that seen under the **PG Short-Term** scenario, and a dwelling requirement that is similar to that of the **SNPP-2012**.

Table 11: Craven demographic scenario outcomes 2012–2032

Scenario	Change 2012–2032				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs-led REM 2014	7,308	13.2%	4,341	17.6%	549	238	147
PG Long-Term	5,060	9.1%	3,418	13.9%	445	188	92
Jobs-led REM 2016	3,316	6.0%	2,729	11.1%	362	150	39
PG Short-Term	3,035	5.5%	2,540	10.3%	354	140	25
SNPP-2012	2,781	5.0%	2,686	10.9%	349	148	4
SNPP-2014	2,465	4.4%	2,359	9.6%	323	130	18
Natural Change	-2,407	-4.3%	-552	-2.2%	42	-30	-82

Note that the 2014-based headship rates have been used.

5.25 With the application of the earlier 2008-based and 2012-based household growth assumptions, the dwelling growth outcomes are summarised for all scenarios in Table 12. As in the demographic scenarios, the 2008-based (HH-08) assumptions result in the highest dwelling requirements, at 281 per year under the **Jobs-led REM 2014** scenario, and 190 per year under the **Jobs-led REM 2016** scenario.

Table 12: Dwelling growth outcomes using variant headship rates, 2012–2032

Scenario	Average Annual Dwelling Requirement		
	HH-08	HH-12	HH-14
Jobs-led REM 2014	281	239	238
PG Long-Term	226	188	188
Jobs-led REM 2016	190	150	150
SNPP-2012	188	148	148
PG Short-Term	179	140	140
SNPP-2014	169	130	130
Natural Change	10	-30	-30

Jobs-led Sensitivity Scenarios

5.26 In the range of scenarios provided to Craven in 2015, Edge Analytics produced two ‘sensitivity’ versions of the **Jobs-led REM 2014** scenario. For consistency, this sensitivity analysis has been updated here, using the latest 2016 REM employment forecasts (i.e. the sensitivity assumptions have been applied to the **Jobs-led REM 2016** scenario).

5.27 In the first sensitivity (**SENS1**), the migration balance is determined by migration schedules more heavily weighted towards the labour force age-groups. This means a greater proportion of people of working age migrate to Craven to meet the defined jobs-growth target than in the ‘core’ version of the **Jobs-led REM 2016** scenario.

5.28 In the second sensitivity (**SENS2**), the same adjustments have been made to the migration schedules as in **SENS1**, but adjustments have also been made to the economic activity rates. In the ‘core’ version of the **Jobs-led REM 2016** scenario (as presented in Table 11), the 2011 Census economic activity rates have been applied, with adjustments made to the older age groups, in line with the OBR forecast. Despite the economic activity rates of the older age groups *increasing* (see Figure 21 on page 28), the ageing of Craven’s population results in a *decline* in the overall

rate of economic activity for the 16–75+ age-group¹⁰. In 2011, the aggregate economic activity rate in Craven for ages 16–75+ was 63%; by 2032, it had declined to 58% under the **Jobs-led REM 2016** scenario. Therefore, in the **SENS2** scenario, the age-specific economic activity rates have been adjusted so that an overall economic activity rate of 63% is maintained throughout the forecast period.

5.29 The results of the two jobs-led sensitivity scenarios (using the 2014-based headship rates) are summarised below in Table 13. With the migration balance determined by migration schedules more heavily weighted towards the labour force age-groups (**SENS1**), the level of population growth is slightly lower than under the ‘core’ **Jobs-led REM 2016** scenario, at 5.8% 2012–2032.

5.30 With the altered migration schedule and the 2011 aggregate economic activity rate of 63% maintained (**SENS2**), the population *decreases* slightly in size between 2012 and 2032. This is a result of maintaining the size of the resident labour force; with a greater proportion of the population participating in the labour force, the level of net migration required to meet the defined jobs growth targets is reduced. The higher annual jobs growth in the **SENS2** variant (+50 per year) is a result of the application of the adjusted economic activity rate profile in the years 2012–2015 (i.e. where the MYEs are defined).

Table 13: Jobs-led REM 2016 sensitivity scenario outcomes

Jobs-led REM 2016	Change 2012–2032				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
'Core' Scenario	3,316	6.0%	2,729	11.1%	362	150	39
SENS1	3,217	5.8%	2,679	10.9%	356	147	39
SENS2	-135	-0.2%	1,424	5.8%	204	78	50

5.31 With the application of the earlier 2008-based (HH-08) and 2012-based (HH-12) headship rates, a similar pattern of dwelling growth is seen as in the scenarios presented above: the HH-12 outcome is the same as the HH-14 outcome, and the HH-08 rates result in a higher level of dwelling growth (Table 14).

¹⁰ Note that in the 2015 range of scenarios provided by Edge Analytics to Craven District Council, the economic activity rates were defined for ages 16–74. In this 2016 update, the economic activity rates are defined for ages 16–75+.

Table 14: Jobs-led REM 2016 sensitivity scenario outcomes

Scenario	Average Annual Dwelling Requirement		
	HH-08	HH-12	HH-14
Jobs-led REM-2016	190	150	150
Jobs-led REM-2016 SENS1	187	148	147
Jobs-led REM-2016 SENS2	117	78	78

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6 Sub-District Scenario Results

Summary

- 6.1 The following series of charts present population growth for the 2001–2032 period for each of the four sub-district areas: North Craven, Mid Craven, South Craven and the area of the YDNP that falls within Craven (see Figure 1 on page 4). The tables present population and household change for the 2012–2032 period, plus the average annual net migration and the estimated average annual dwelling requirement. Scenarios are ranked in order of population change.
- 6.2 The scenarios have been run using household growth assumptions from the 2014-based DCLG household model, with a comparison to the 2008-based household assumptions provided in Section 7.
- 6.3 Although the population growth estimates for the sum of the four sub-district areas are equivalent to those generated for Craven as a whole, there are differences in the household and dwelling totals produced by the sub-district analysis. These small discrepancies are the result of using different population, migration and headship-rate combinations at sub-district level. The household and dwelling outcomes are generally slightly higher at sub-district level.

North Craven

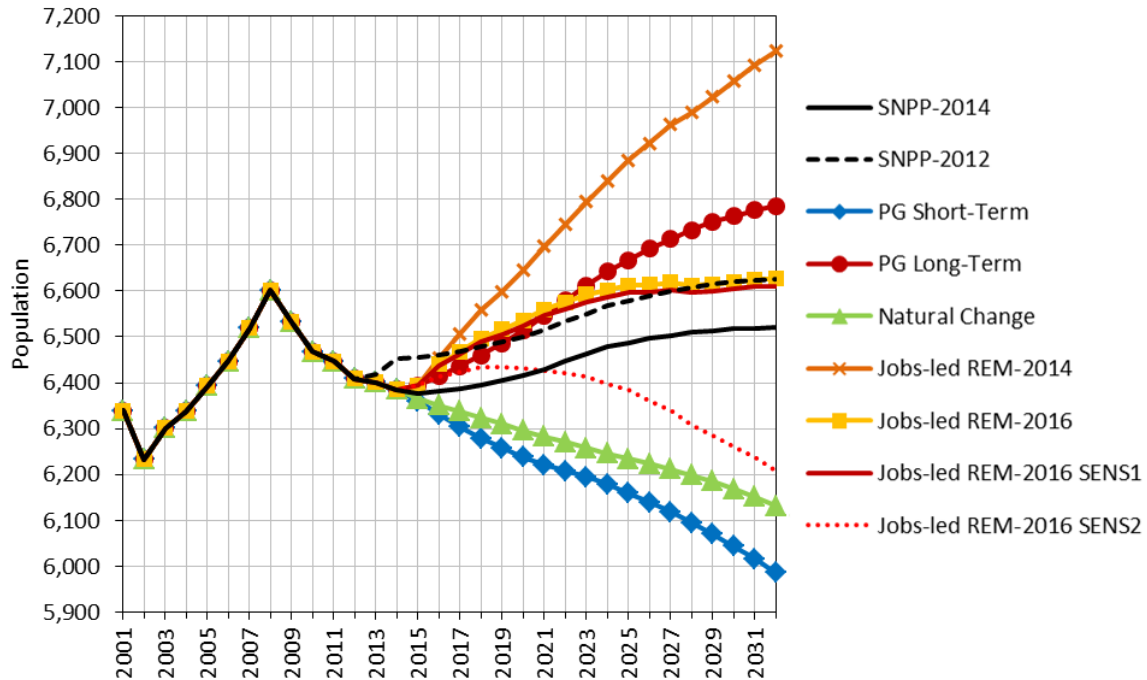


Figure 24: North Craven scenarios: population growth 2001–2032

Table 15: North Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM 2014	716	11.2%	480	16.8%	55	27
PG Long-Term	378	5.9%	342	12.0%	40	19
Jobs-led REM 2016	220	3.4%	278	9.7%	32	16
SNPP-2012	218	3.4%	316	11.1%	35	18
Jobs-led REM 2016 SENS1	203	3.2%	269	9.4%	31	15
SNPP-2014	112	1.7%	232	8.1%	27	13
Jobs-led REM 2016 SENS2	-199	-3.1%	124	4.3%	13	7
Natural Change	-277	-4.3%	-109	-3.8%	0	-6
PG Short-Term	-423	-6.6%	-22	-0.8%	2	-1

Mid Craven

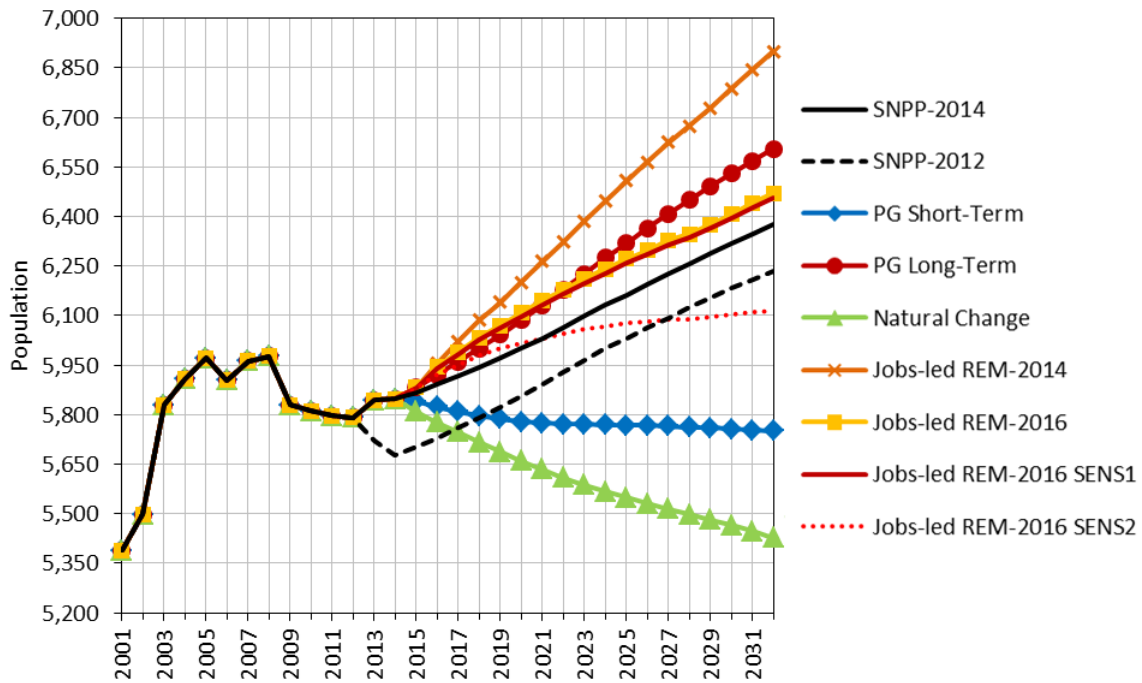


Figure 25: Mid Craven scenarios: population growth 2001–2032

Table 16: Mid Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM 2014	1,107	19.1%	693	26.9%	88	39
PG Long-Term	814	14.1%	567	22.0%	74	32
Jobs-led REM 2016	678	11.7%	509	19.8%	68	29
Jobs-led REM 2016 SENS1	665	11.5%	501	19.5%	67	28
SNPP-2014	585	10.1%	466	18.1%	63	26
SNPP-2012	444	7.7%	452	17.6%	60	26
Jobs-led REM 2016 SENS2	324	5.6%	374	14.5%	51	21
PG Short-Term	-40	-0.7%	246	9.5%	30	14
Natural Change	-365	-6.3%	-93	-3.6%	5	-5

South Craven

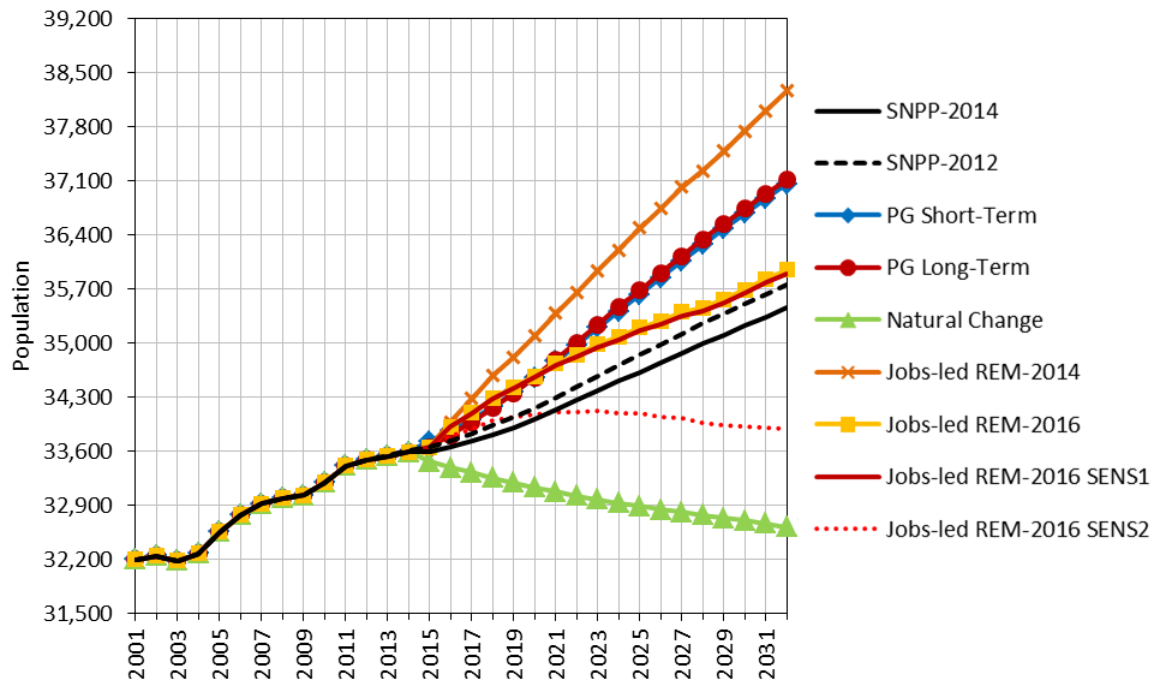


Figure 26: South Craven scenarios: population growth 2001–2032

Table 17: South Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM-2014	4,779	14.3%	2,507	16.8%	308	133
PG Long-Term	3,631	10.8%	2,042	13.7%	258	108
PG Short-Term	3,571	10.7%	2,006	13.5%	267	106
Jobs-led REM-2016	2,459	7.3%	1,571	10.6%	202	83
Jobs-led REM-2016 SENS1	2,415	7.2%	1,549	10.4%	199	82
SNPP-2012	2,267	6.8%	1,659	11.1%	197	88
SNPP-2014	1,967	5.9%	1,354	9.1%	179	72
Jobs-led REM-2016 SENS2	399	1.2%	788	5.3%	110	42
Natural Change	-871	-2.6%	-316	-2.1%	12	-17

Yorkshire Dales National Park (within Craven)

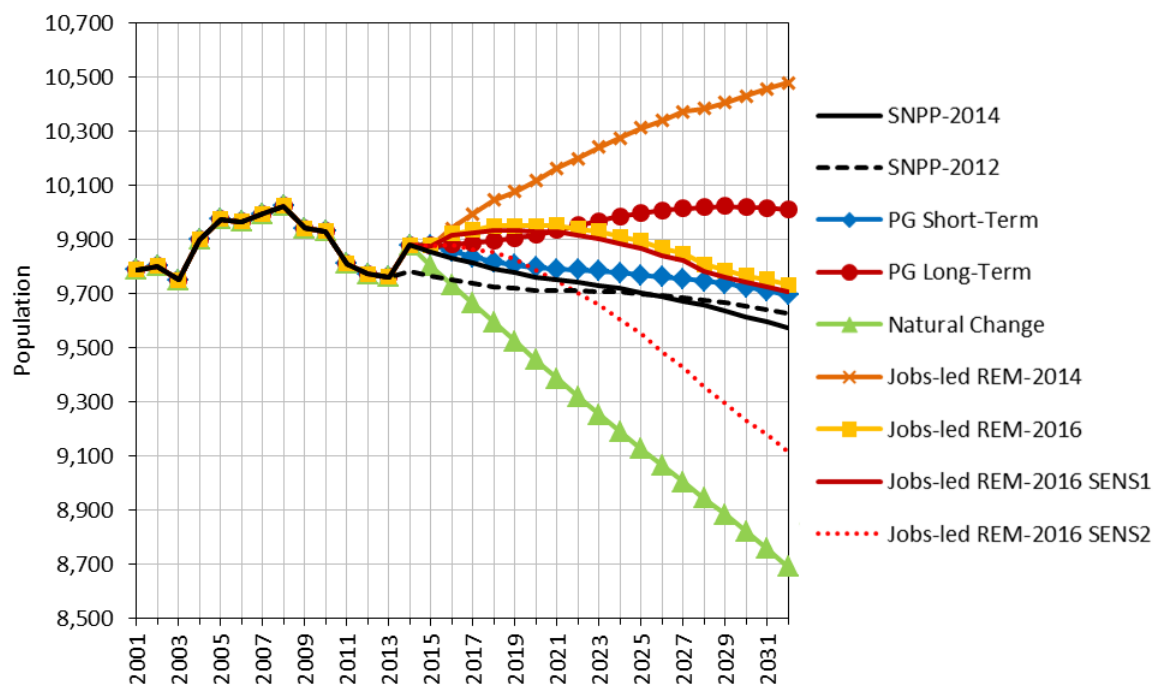


Figure 27: YDNP Craven scenarios: population growth 2001–2032

Table 18: YDNP Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM 2014	706	7.2%	683	15.7%	116	41
PG Long-Term	238	2.4%	470	10.8%	93	28
Jobs-led REM 2016	-40	-0.4%	368	8.5%	80	22
Jobs-led REM 2016 SENS1	-67	-0.7%	353	8.1%	78	21
PG Short-Term	-78	-0.8%	322	7.4%	76	19
SNPP-2012	-147	-1.5%	342	7.8%	75	20
SNPP-2014	-199	-2.0%	295	6.8%	72	18
Jobs-led REM 2016 SENS2	-657	-6.7%	129	3.0%	51	8
Natural Change	-1,083	-11.1%	-336	-7.7%	10	-20

7 Summary

Approach

- 7.1 The objective of this report has been to provide a range of demographic evidence to support the development of Craven District Council's Local Plan. The evidence is an update on previous analysis, incorporating the latest statistical releases from ONS and DCLG and providing a range of growth scenarios for Craven district and for its four sub-district planning areas. All scenario analysis has been produced using POPGROUP technology.
- 7.2 The starting point of the scenario analysis is the 2014-based SNPP and the 2014-based DCLG household projection model for Craven. A number of alternative trend scenarios, using variant migration assumptions, have been developed and are compared to the 2014-based SNPP benchmark.
- 7.3 Household and dwelling growth have been estimated using assumptions from the 2014-based DCLG household projection model for Craven. An estimate of household and dwelling growth implied by the earlier 2008-based and 2012-based DCLG household projection models has been included for comparison.
- 7.4 The analysis considers the effect of changing age structure on its labour force, linking the demographic scenarios to an estimated jobs growth requirement using assumptions on economic activity rates, unemployment and commuting. These are compared to two jobs forecasts from the REM; an original forecast from 2014, plus a more recent (June 2016) forecast. Sensitivity testing has also been carried out on a scenario linked to the latest 2016 REM forecast.

Growth Outcomes

- 7.5 A summary of the dwelling growth outcomes associated with each scenario for Craven is provided in Figure 28, illustrating results associated with the 2008-based (HH-08) and 2014-based

(HH-14) household growth assumptions (the 2012-based (HH-12) outcomes have been disregarded due to their similarity with the 2014-based results).

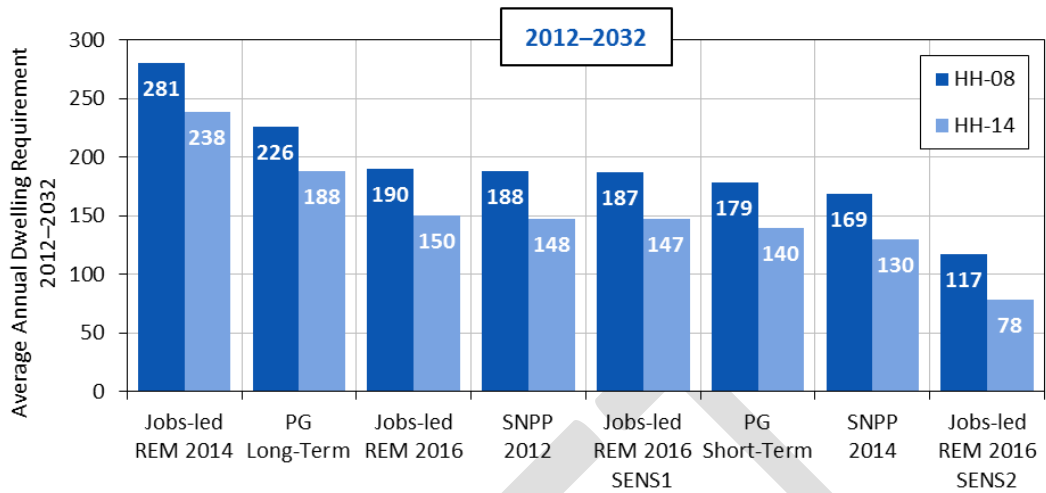


Figure 28: Dwelling growth outcomes for Craven District 2012-2032

7.6 Craven District Council is seeking to review and refine its Local Plan housing target in collaboration with the planning team at the YDNP. For alignment with the YDNP’s plan period, scenario results are presented in Figure 29 with an alternative 2015-2030 horizon. The annual average dwelling growth outcomes are generally *higher* with the shorter plan-period, particularly for the **Jobs-led REM 2014** scenario, due to a dampened effect of a reducing unemployment rate post-2015.

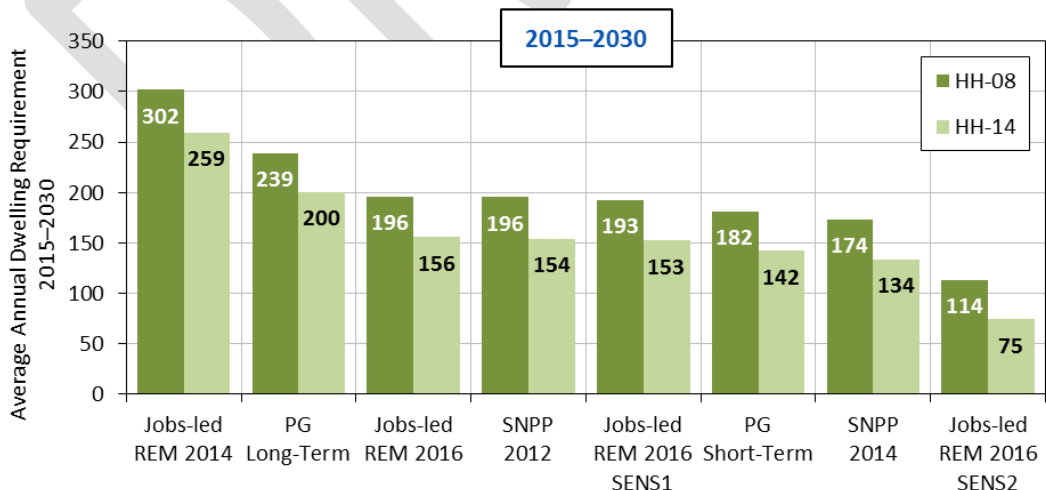


Figure 29: Dwelling growth outcomes for Craven District 2015-2030

7.7 For each of the four sub-district areas, results are summarised in table form, with output for each

scenario using the variant 2008-based and 2014-based household assumptions (excluding the 2012-based results due to their similarity with the 2014-based outcomes). Scenario results are presented for two time-periods; 2012–2032 and 2015–2030 (Table 19).

Table 19: Sub-district scenarios: estimated dwelling growth 2012–2032 & 2015–2030

North Craven

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM 2014	32	27	36	31
PG Long-Term	24	19	27	22
SNPP-2012	23	18	23	18
Jobs-led REM 2016	21	16	23	18
Jobs-led REM 2016 SENS1	20	15	22	17
SNPP-2014	18	13	20	15
Jobs-led REM 2016 SENS2	12	7	13	8
PG Short-Term	4	-1	4	-1
Natural Change	-1	-6	-1	-6

Mid-Craven

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM 2014	44	39	46	41
PG Long-Term	37	32	37	33
Jobs-led REM 2016	34	29	34	29
Jobs-led REM 2016 SENS1	33	28	33	28
SNPP-2014	31	26	31	26
SNPP-2012	30	26	34	29
Jobs-led REM 2016 SENS2	26	21	25	20
PG Short-Term	18	14	16	12
Natural Change	-1	-5	-4	-8

South Craven

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM 2014	156	133	171	147
PG Long-Term	130	108	140	118
PG Short-Term	129	106	137	113
SNPP-2012	111	88	116	92
Jobs-led REM 2016	106	83	112	89
Jobs-led REM 2016 SENS1	105	82	111	88
SNPP-2014	94	72	99	76
Jobs-led REM 2016 SENS2	64	42	65	42
Natural Change	6	-17	3	-22

Yorkshire Dales National Park Craven

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM 2014	49	41	50	42
PG Long-Term	36	28	34	27
Jobs-led REM 2016	30	22	27	20
Jobs-led REM 2016 SENS1	29	21	26	19
SNPP-2012	28	20	27	19
PG Short-Term	27	19	24	16
SNPP-2014	25	18	23	15
Jobs-led REM 2016 SENS2	15	8	11	4
Natural Change	-13	-20	-19	-27

- 7.8 Note that the sub-district dwelling growth figures (presented in Table 19) do not sum exactly to the district-level results presented elsewhere in this report. This is the result of using different population, migration and headship-rate combinations at sub-district level. As a general guide to the contribution of each sub-district, a proportional split of estimated dwelling growth is provided (Figure 30).

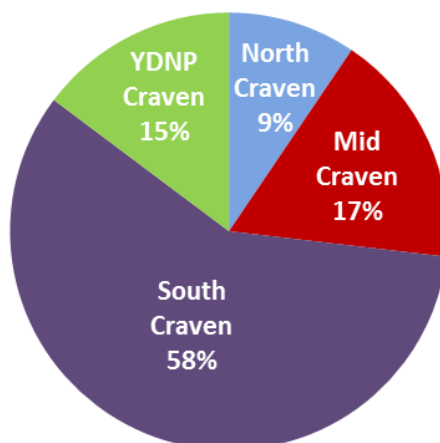


Figure 30: Dwelling growth proportions for Craven's sub-district planning areas

- 7.9 58% of Craven's estimated dwelling growth is associated with the largest South Craven sub-district, with 9% and 17% associated with North Craven and Mid-Craven respectively. The YDNP portion of the district is estimated to account for 15% of dwelling growth.

Concluding Comments

- 7.10 An updated range of evidence has been presented here for Craven District Council to consider in the formulation of its Local Plan. The latest official population and household projections from the ONS and DCLG respectively suggest modest growth in Craven's population between 2012 and 2032, resulting in an estimated dwelling requirement of 130 per year (as in the **SNPP-2014** scenario).
- 7.11 This relatively low growth is associated with a substantial shift in the age-structure of Craven's population, with a large uplift in its Old Age Dependency ratio, an increasing imbalance between its core labour force ages (16–64) and older age-groups (65+). These changes to the age structure of the population will have an impact upon Craven's ability to sustain its economic growth.

- 7.12 Quantifying the link between demographic and economic change is challenging. The latest June 2016 REM for Craven forecasts a lower level of jobs growth than the previous 2014 REM. The scenario analysis presented here has demonstrated how a **PG Long-Term** trend scenario projects higher levels of migration than the **Jobs-led REM 2016** scenario, consequently supporting a higher level of employment growth under the defined economic activity, unemployment and commuting assumptions. Under the same assumptions, the jobs growth forecast in the **Jobs-led 2014 REM** scenario is estimated to require the highest level of migration, with a resulting dwelling requirement of 238 per year, rising to 281 per year if the higher rates of household formation suggested by the 2008-based household evidence are considered. As identified in the sensitivity scenarios, higher levels of economic activity, particularly in the older age groups, coupled with higher levels of migration would help to maintain a more youthful labour force and support local employment growth.
- 7.13 Craven District Council is seeking to review its Local Plan housing target in collaboration with the planning team at the YDNP. The analysis presented here has illustrated the sub-district implications of each scenario. In aligning with the YDNP planning activities, a dwelling growth allocation of 15% would seem appropriate based upon the evidence presented here.

Addendum

Introduction

- 8.1 This addendum uses the latest Regional Economic Model (REM) forecast of economic growth in Craven to update the demographic scenario evidence presented in the main body of the report. Published in September 2016, the new REM data is the first forecast to be produced following the EU referendum result. The REM forecast data has been made available in a less detailed form than previous evidence. Therefore, an average annual FTE growth has been estimated from the data for the 2015–2036 period and applied in each year of the forecast period (Figure 31).

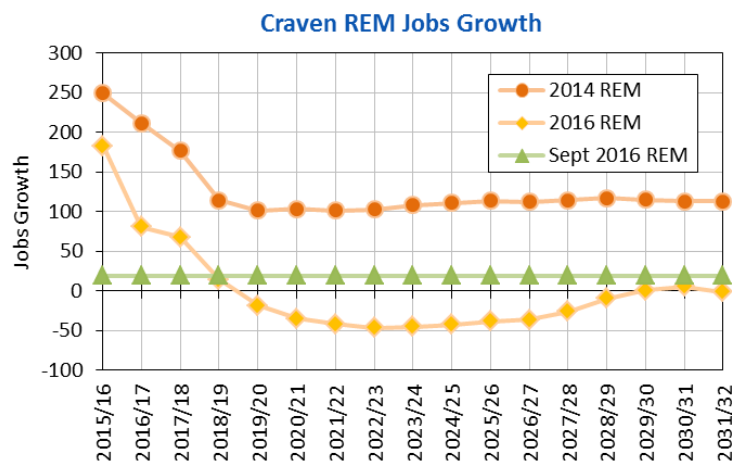


Figure 31: Craven FTE growth forecast under the (Source: REM 2014, 2016 & September 2016)

- 8.2 Over the 2015–2032 period, jobs growth under the September 2016 REM is *lower* than under the 2014 REM, however *higher* than under the earlier 2016 REM (Table 20).

Table 20: Craven FTE growth 2015–2032 (Source: REM 2014, 2016 & September 2016)

REM	FTE Growth 2015–2032
2014	2,183
2016	15
September 2016	324

- 8.3 Three jobs-led scenarios have been developed using the employment growth trajectory under the September 2016 REM (**Jobs-led REM Sept 2016**); including one core scenario and two sensitivity scenarios in which varying migration schedules and economic activity rate assumptions have been applied. The outcomes under these scenarios are presented alongside the previous demographic and jobs-led scenario outcomes for comparison.

District Level Scenario Outcomes

Demographic Scenarios

- 8.4 The population and dwelling growth outcomes of the **Jobs-led REM Sept 2016** scenario are compared to the scenarios presented in the main body of this report (Table 21). To support the level of jobs growth implied by **Jobs-led REM Sept 2016**, a higher level of net migration (+389 per year) is required, compared to the **Jobs-led REM 2016** scenario (+362 per year). Under the **Jobs-led REM Sept 2016** scenario, population growth of 6.9% over the 2012–2032 period results in an average annual dwelling growth requirement of +161. This is higher than the **SNPP, PG Short Term** and **Natural Change** scenarios but lower than the **PG Long Term** scenario.

Table 21: Craven demographic scenario outcomes 2012–2032

Scenario	Change 2012–2032				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs-led REM-2014	7,308	13.2%	4,341	17.6%	549	238	147
PG-Long Term	5,060	9.1%	3,418	13.9%	445	188	92
Jobs-led REM-Sept 2016	3,853	6.9%	2,935	11.9%	389	161	54
Jobs-led REM-2016	3,316	6.0%	2,729	11.1%	362	150	39
PG-Short Term	3,035	5.5%	2,540	10.3%	354	140	25
SNPP-2012	2,781	5.0%	2,686	10.9%	349	148	4
SNPP-2014	2,465	4.4%	2,359	9.6%	323	130	18
Natural Change	-2,407	-4.3%	-552	-2.2%	42	-30	-82

Note: Household and dwelling growth assessed using 2014-based headship rates

- 8.5 Dwelling growth under the 2008-based and 2012-based headship rates is presented alongside the 2014-based outcomes (Table 22). The 2008-based (HH-08) assumptions result in a higher dwelling requirement for the **Jobs-led REM Sept 2016** scenario at +202 per year. This compares

to +162 dwellings under the 2012-based assumptions (HH-12) and +161 under the 2014-based rates (HH-14).

Table 22: Dwelling growth outcomes using variant headship rates, 2012–2032

Scenario	Average Annual Dwelling Requirement		
	HH-08	HH-12	HH-14
Jobs-led REM-2014	281	239	238
PG-Long Term	226	188	188
Jobs-led REM-Sept 2016	202	162	161
Jobs-led REM-2016	190	150	150
SNPP-2012	188	148	148
PG-Short Term	179	140	140
SNPP-2014	169	130	130
Natural Change	10	-30	-30

Sensitivity Scenarios

- 8.6 Two alternative versions of the **Jobs-led REM Sept 2016** scenario have been developed, with varying migration schedule and economic activity rate assumptions. These assumptions are consistent with the **SENS1** and **SENS2** scenarios presented in the main body of this report (refer to paragraph 5.27 and 5.28). The result of these sensitivities is similar to that described for the previous **Jobs-led REM 2016** scenario. A small reduction in the dwelling requirement is estimated when an alternative migration schedule is applied, but a much larger reduction would apply if current economic activity rates were to be maintained at their existing levels to 2032 (Table 23).

Table 23: Jobs-led REM 2016 & September 2016 sensitivity scenario outcomes

Scenario	Change 2012–2032				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs-led REM-Sept 2016	3,853	6.9%	2,935	11.9%	389	161	54
SENS1	3,700	6.7%	2,842	11.5%	379	156	54
SENS2	323	0.6%	1,579	6.4%	226	87	65
Jobs-led REM-2016	3,316	6.0%	2,729	11.1%	362	150	39
SENS1	3,217	5.8%	2,679	10.9%	356	147	39
SENS2	-135	-0.2%	1,424	5.8%	204	78	50

Note: Core scenarios are highlighted in red

- 8.7 Dwelling growth is higher under the application of the 2008-based headship rates (HH-08), in comparison to the 2012-based (HH-12) and 2014-based (HH-14) headship rates (Table 24).

Table 24: Jobs-led REM 2016 & Sept 2016 sensitivity scenario dwelling growth outcomes

Scenario	Average Annual Dwelling Requirement 2012–2032		
	HH-08	HH-12	HH-14
Jobs-led REM-Sept 2016	202	162	161
SENS1	196	157	156
SENS2	126	87	87
Jobs-led REM-2016	190	150	150
SENS1	187	148	147
SENS2	117	78	78

Sub-District Level Scenario Outcomes

- 8.8 The following charts and tables present the **Jobs-led REM Sept 2016** scenario outcomes (highlighted in red), alongside the demographic and previous jobs-led scenarios for each of the four sub-district areas; North Craven, Mid Craven, South Craven and Yorkshire Dales National Park (YDNP) Craven.
- 8.9 The charts (Figure 32–Figure 35) present the population growth trajectory under each scenario for the 2001–2032 period. The tables (Table 25–Table 28) present population and household change over the 2012–2032 plan period, with the associated average annual net migration and dwellings.
- 8.10 For each of the four sub-district areas, the **Jobs-led REM Sept 2016** scenario results in a higher population and dwelling growth than under the earlier **Jobs-led REM 2016** scenario but lower than under the Jobs-led REM 2014 scenario. Under the sensitivity scenarios, **Jobs-led REM Sept 2016 SENS2** results in substantially lower population, household and dwelling growth than that suggested under the **Jobs-led REM Sept 2016 SENS1** scenario, with higher economic activity rates maintaining the size of the labour force to support employment growth.

North Craven

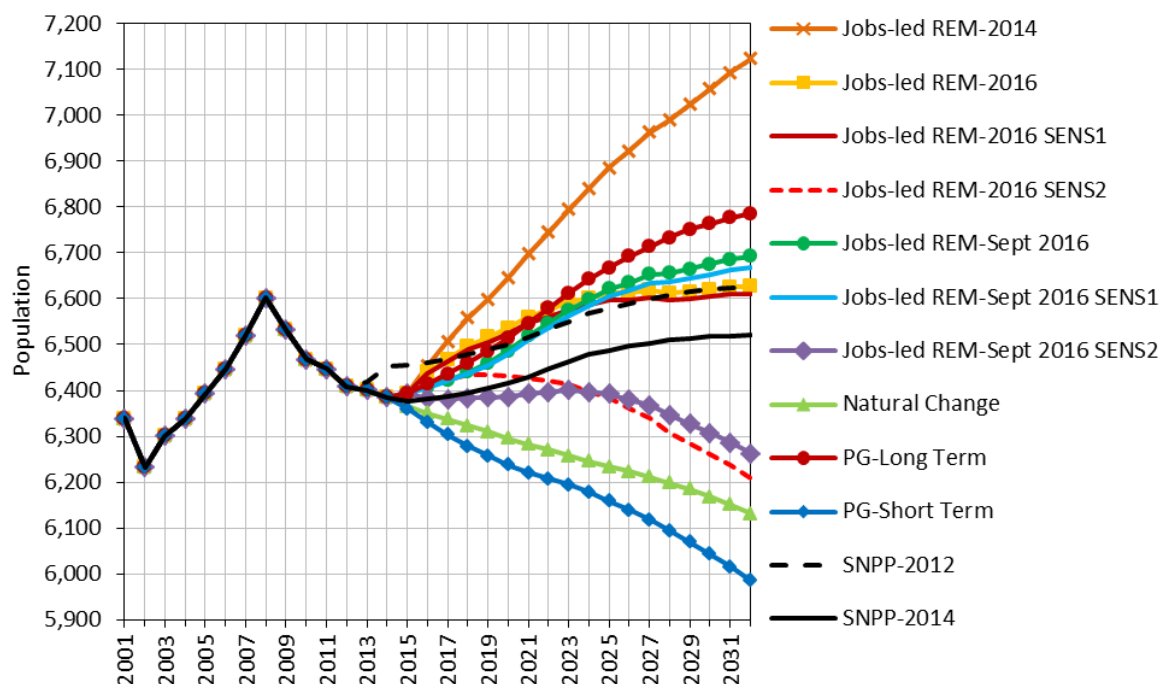


Figure 32: North Craven scenarios: population growth 2001–2032

Table 25: North Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM-2014	716	11.2%	480	16.8%	55	27
PG-Long Term	378	5.9%	342	12.0%	40	19
Jobs-led REM-Sept 2016	285	4.4%	304	10.6%	35	17
Jobs-led REM-Sept 2016 SENS1	261	4.1%	288	10.1%	34	16
Jobs-led REM-2016	220	3.4%	278	9.7%	32	16
SNPP-2012	218	3.4%	316	11.1%	35	18
Jobs-led REM-2016 SENS1	203	3.2%	269	9.4%	31	15
SNPP-2014	112	1.7%	232	8.1%	27	13
Jobs-led REM-Sept 2016 SENS2	-145	-2.3%	142	5.0%	16	8
Jobs-led REM-2016 SENS2	-199	-3.1%	124	4.3%	13	7
Natural Change	-277	-4.3%	-109	-3.8%	0	-6
PG-Short Term	-423	-6.6%	-22	-0.8%	2	-1

Note: Household and dwelling growth assessed using 2014-based headship rates

Mid Craven

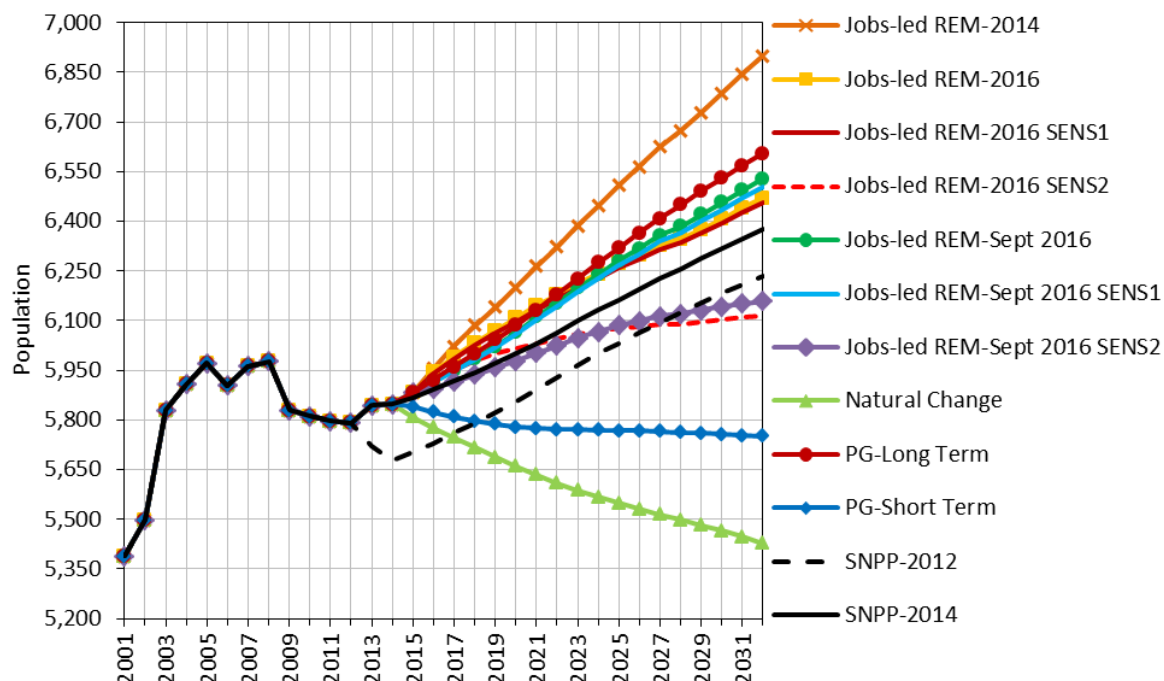


Figure 33: Mid Craven scenarios: population growth 2001–2032

Table 26: Mid Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM-2014	1,107	19.1%	693	26.9%	88	39
PG-Long Term	814	14.1%	567	22.0%	74	32
Jobs-led REM-Sept 2016	736	12.7%	533	20.7%	70	30
Jobs-led REM-Sept 2016 SENS1	714	12.3%	517	20.1%	69	29
Jobs-led REM-2016	678	11.7%	509	19.8%	68	29
Jobs-led REM-2016 SENS1	665	11.5%	501	19.5%	67	28
SNPP-2014	585	10.1%	466	18.1%	63	26
SNPP-2012	444	7.7%	452	17.6%	60	26
Jobs-led REM-Sept 2016 SENS2	368	6.4%	389	15.1%	53	22
Jobs-led REM-2016 SENS2	324	5.6%	374	14.5%	51	21
PG-Short Term	-40	-0.7%	246	9.5%	30	14
Natural Change	-365	-6.3%	-93	-3.6%	5	-5

Note: Household and dwelling growth assessed using 2014-based headship rates

South Craven

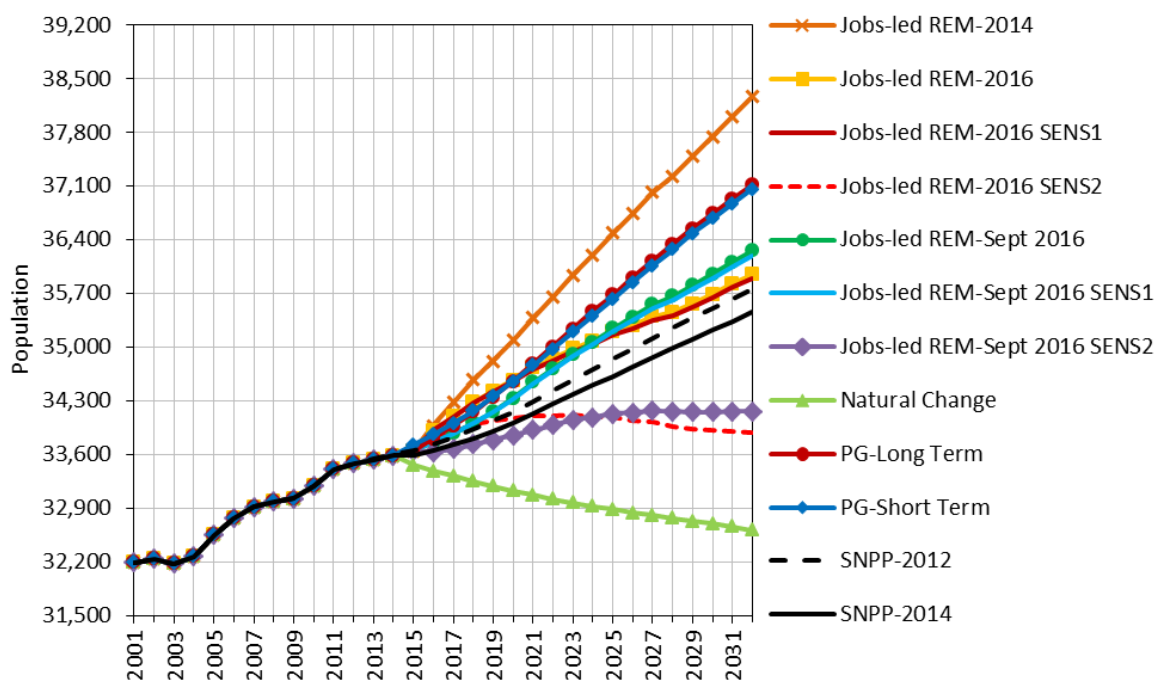


Figure 34: South Craven scenarios: population growth 2001–2032

Table 27: South Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM-2014	4,779	14.3%	2,507	16.8%	308	133
PG-Long Term	3,631	10.8%	2,042	13.7%	258	108
PG-Short Term	3,571	10.7%	2,006	13.5%	267	106
Jobs-led REM-Sept 2016	2,769	8.3%	1,688	11.3%	217	90
Jobs-led REM-Sept 2016 SENS1	2,705	8.1%	1,647	11.1%	213	87
Jobs-led REM-2016	2,459	7.3%	1,571	10.6%	202	83
Jobs-led REM-2016 SENS1	2,415	7.2%	1,549	10.4%	199	82
SNPP-2012	2,267	6.8%	1,659	11.1%	197	88
SNPP-2014	1,967	5.9%	1,354	9.1%	179	72
Jobs-led REM-Sept 2016 SENS2	674	2.0%	881	5.9%	123	47
Jobs-led REM-2016 SENS2	399	1.2%	788	5.3%	110	42
Natural Change	-871	-2.6%	-316	-2.1%	12	-17

Note: Household and dwelling growth assessed using 2014-based headship rates

Yorkshire Dales National Park (within Craven)

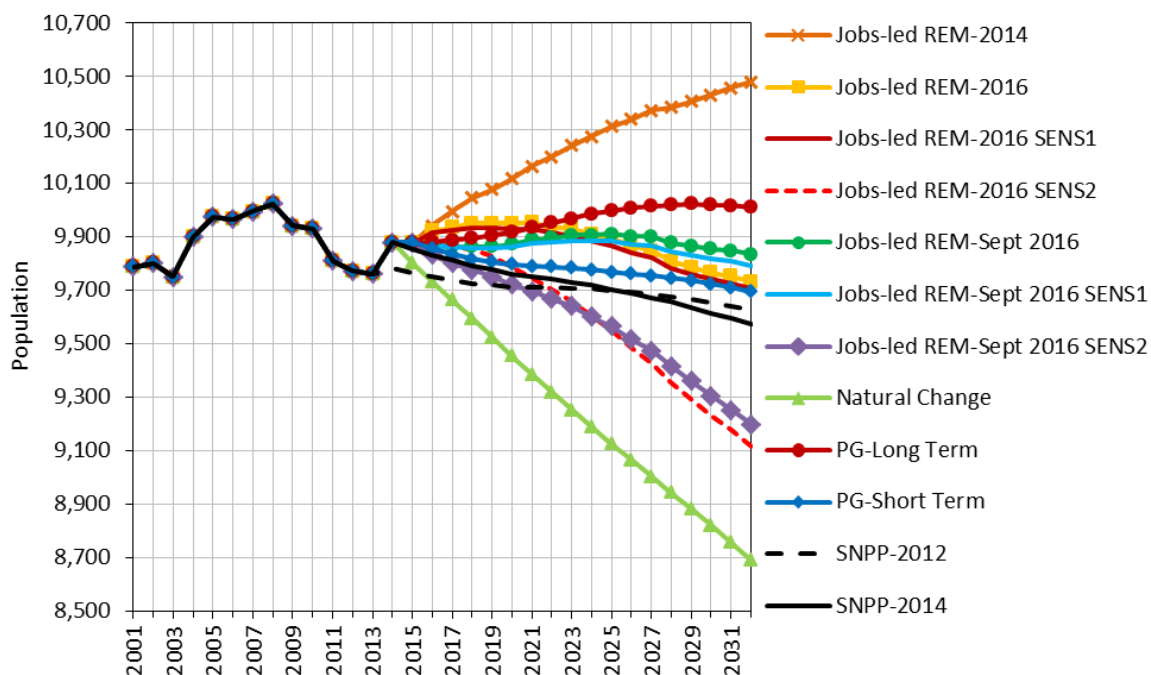


Figure 35: YDNP Craven scenarios: population growth 2001–2032

Table 28: YDNP Craven scenarios 2012–2032

Scenario	Change 2012–2032				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
Jobs-led REM-2014	706	7.2%	683	15.7%	116	41
PG-Long Term	238	2.4%	470	10.8%	93	28
Jobs-led REM-Sept 2016	63	0.6%	409	9.4%	85	24
Jobs-led REM-Sept 2016 SENS1	21	0.2%	383	8.8%	82	23
Jobs-led REM-2016	-40	-0.4%	368	8.5%	80	22
Jobs-led REM-2016 SENS1	-67	-0.7%	353	8.1%	78	21
PG-Short Term	-78	-0.8%	322	7.4%	76	19
SNPP-2012	-147	-1.5%	342	7.8%	75	20
SNPP-2014	-199	-2.0%	295	6.8%	72	18
Jobs-led REM-Sept 2016 SENS2	-574	-5.9%	157	3.6%	55	9
Jobs-led REM-2016 SENS2	-657	-6.7%	129	3.0%	51	8
Natural Change	-1,083	-11.1%	-336	-7.7%	10	-20

Note: Household and dwelling growth assessed using 2014-based headship rates

Dwelling Growth Summary

District Level

8.11 A summary of the average annual dwelling growth associated with each of the scenarios is presented in the following charts (Figure 36 and Figure 37). The dwelling growth results are presented under the 2014-based and 2008-based household model growth assumptions and presented for the two time periods; 2012–2032 and 2015–2030.

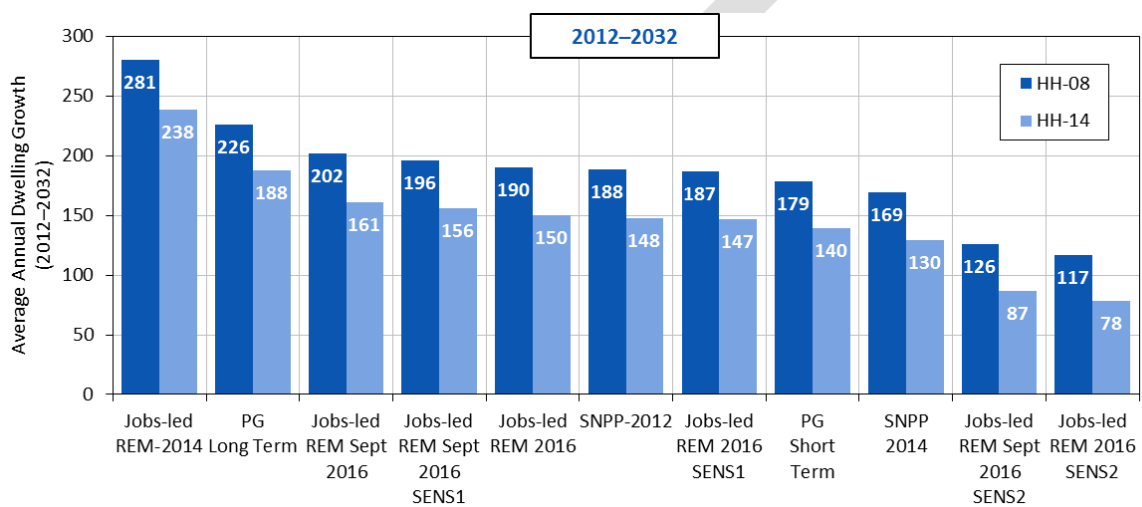


Figure 36: Dwelling growth outcomes for Craven District 2012–2032

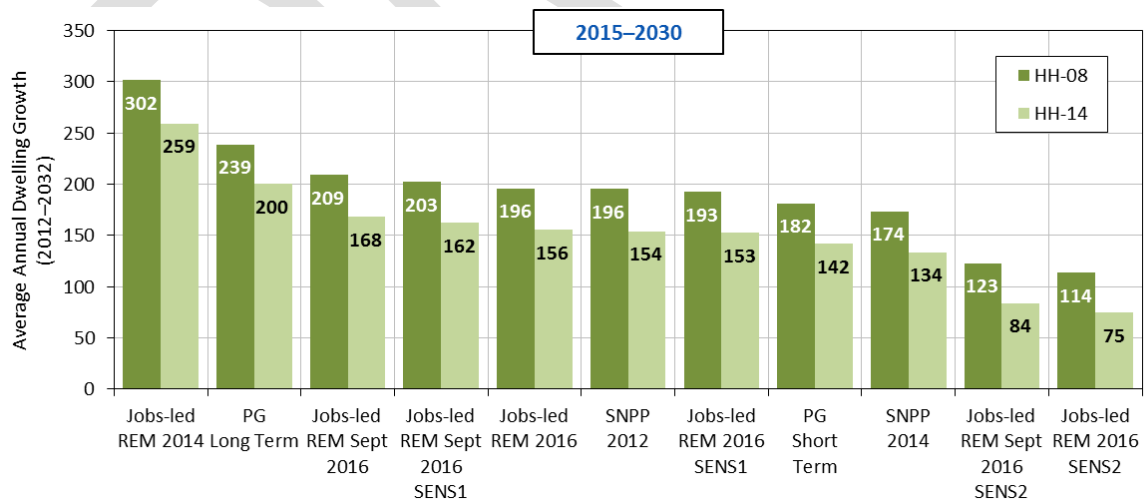


Figure 37: Dwelling growth outcomes for Craven District 2015–2030

8.12 The dwelling growth under each scenario for the four sub-district areas is summarised in table form (Table 29–Table 32). Dwelling growth is presented for the two time periods; 2012–2032 and 2015–2030.

Table 29: North Craven scenarios: estimated dwelling growth 2012–2032 & 2015–2030

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM-2014	32	27	36	31
PG-Long Term	24	19	27	22
SNPP-2012	23	18	23	18
Jobs-led REM-Sept 2016	22	17	24	19
Jobs-led REM-Sept 2016 SENS1	21	16	23	18
Jobs-led REM-2016	21	16	23	18
Jobs-led REM-2016 SENS1	20	15	22	17
SNPP-2014	18	13	20	15
Jobs-led REM-Sept 2016 SENS2	13	8	14	9
Jobs-led REM-2016 SENS2	12	7	13	8
PG-Short Term	4	-1	4	-1
Natural Change	-1	-6	-1	-6

Table 30: Mid Craven scenarios: estimated dwelling growth 2012–2032 & 2015–2030

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM-2014	44	39	46	41
PG-Long Term	37	32	37	33
Jobs-led REM-Sept 2016	35	30	35	30
Jobs-led REM-Sept 2016 SENS1	34	29	34	29
Jobs-led REM-2016	34	29	34	29
Jobs-led REM-2016 SENS1	33	28	33	28
SNPP-2014	31	26	31	26
SNPP-2012	30	26	34	29
Jobs-led REM-Sept 2016 SENS2	27	22	26	21
Jobs-led REM-2016 SENS2	26	21	25	20
PG-Short Term	18	14	16	12
Natural Change	-1	-5	-4	-8

Table 31: South Craven scenarios: estimated dwelling growth 2012–2032 & 2015–2030

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM-2014	156	133	171	147
PG-Long Term	130	108	140	118
PG-Short Term	129	106	137	113
Jobs-led REM-Sept 2016	112	90	119	96
SNPP-2012	111	88	116	92
Jobs-led REM-Sept 2016 SENS1	110	87	117	93
Jobs-led REM-2016	106	83	112	89
Jobs-led REM-2016 SENS1	105	82	111	88
SNPP-2014	94	72	99	76
Jobs-led REM-Sept 2016 SENS2	69	47	70	47
Jobs-led REM-2016 SENS2	64	42	65	42
Natural Change	6	-17	3	-22

Table 32: YDNP Craven scenarios: estimated dwelling growth 2012–2032 & 2015–2030

Scenario	2012–2032		2015–2030	
	HH-08	HH-14	HH-08	HH-14
Jobs-led REM-2014	49	41	50	42
PG-Long Term	36	28	34	27
Jobs-led REM-Sept 2016	32	24	30	23
Jobs-led REM-Sept 2016 SENS1	31	23	28	21
Jobs-led REM-2016	30	22	27	20
Jobs-led REM-2016 SENS1	29	21	26	19
SNPP-2012	28	20	27	19
PG-Short Term	27	19	24	16
SNPP-2014	25	18	23	15
Jobs-led REM-Sept 2016 SENS2	17	9	13	6
Jobs-led REM-2016 SENS2	15	8	11	4
Natural Change	-13	-20	-19	-27

Appendix A

POPGROUP Methodology

Forecasting Methodology

- A.1 Evidence 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 which incorporates an industry-standard methodology removes this obstacle and enables a focus on assumptions and output, rather than methods.
- A.2 Demographic forecasts have been developed using the POPGROUP suite of products. POPGROUP is a family of demographic models that enables forecasts to be derived for population, households and the labour force, for areas and social groups. The main POPGROUP model (Figure 38) is a cohort component model, which enables the development of population forecasts based on births, deaths and migration inputs and assumptions.
- A.3 The Derived Forecast (DF) model (Figure 39) sits alongside the population model, providing a headship rate model for household projections and an economic activity rate model for labour-force projections.
- A.4 For further information on POPGROUP, please refer to the Edge Analytics website: <http://www.edgeanalytics.co.uk/>.

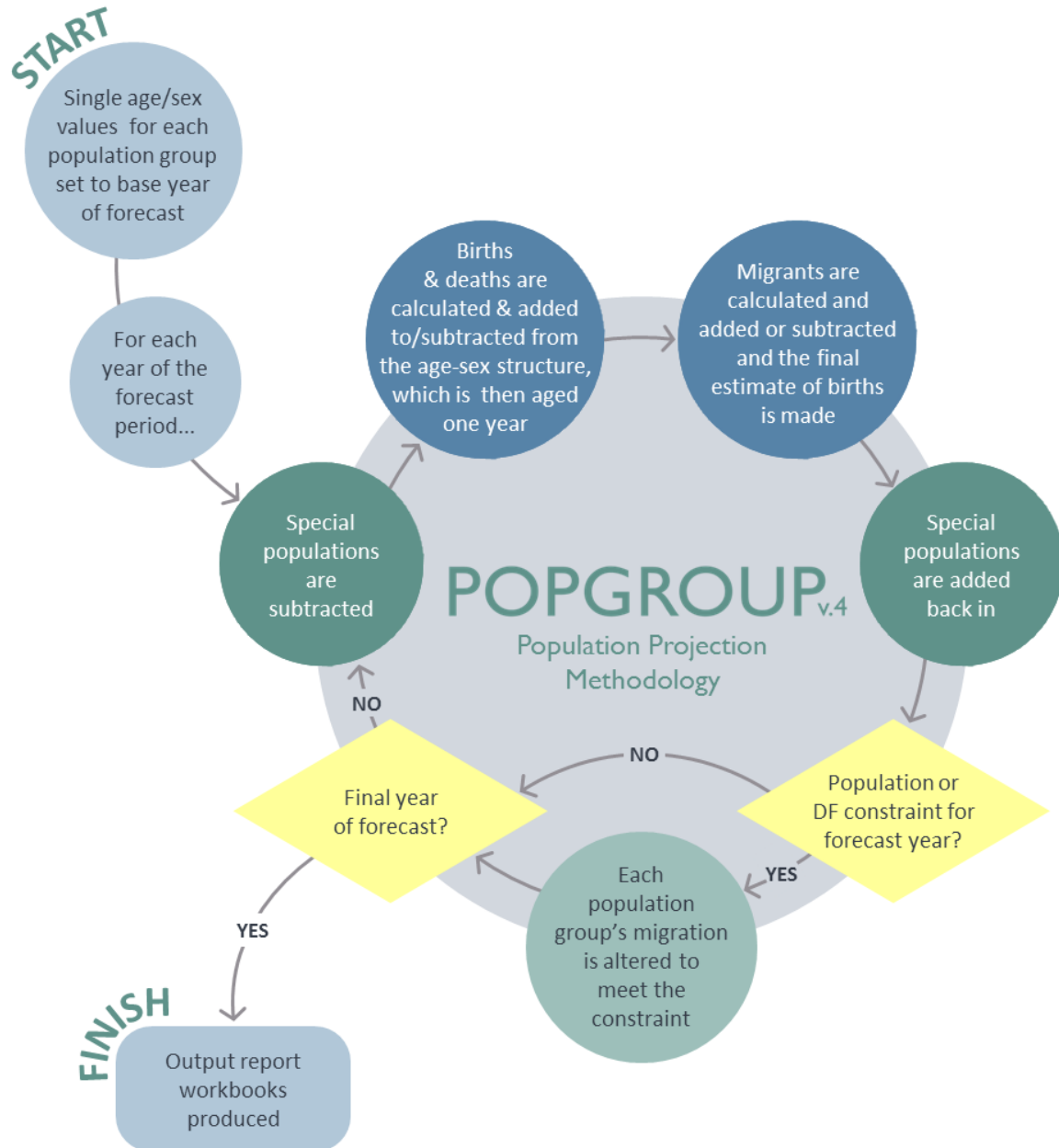


Figure 38: POPGROUP population projection methodology

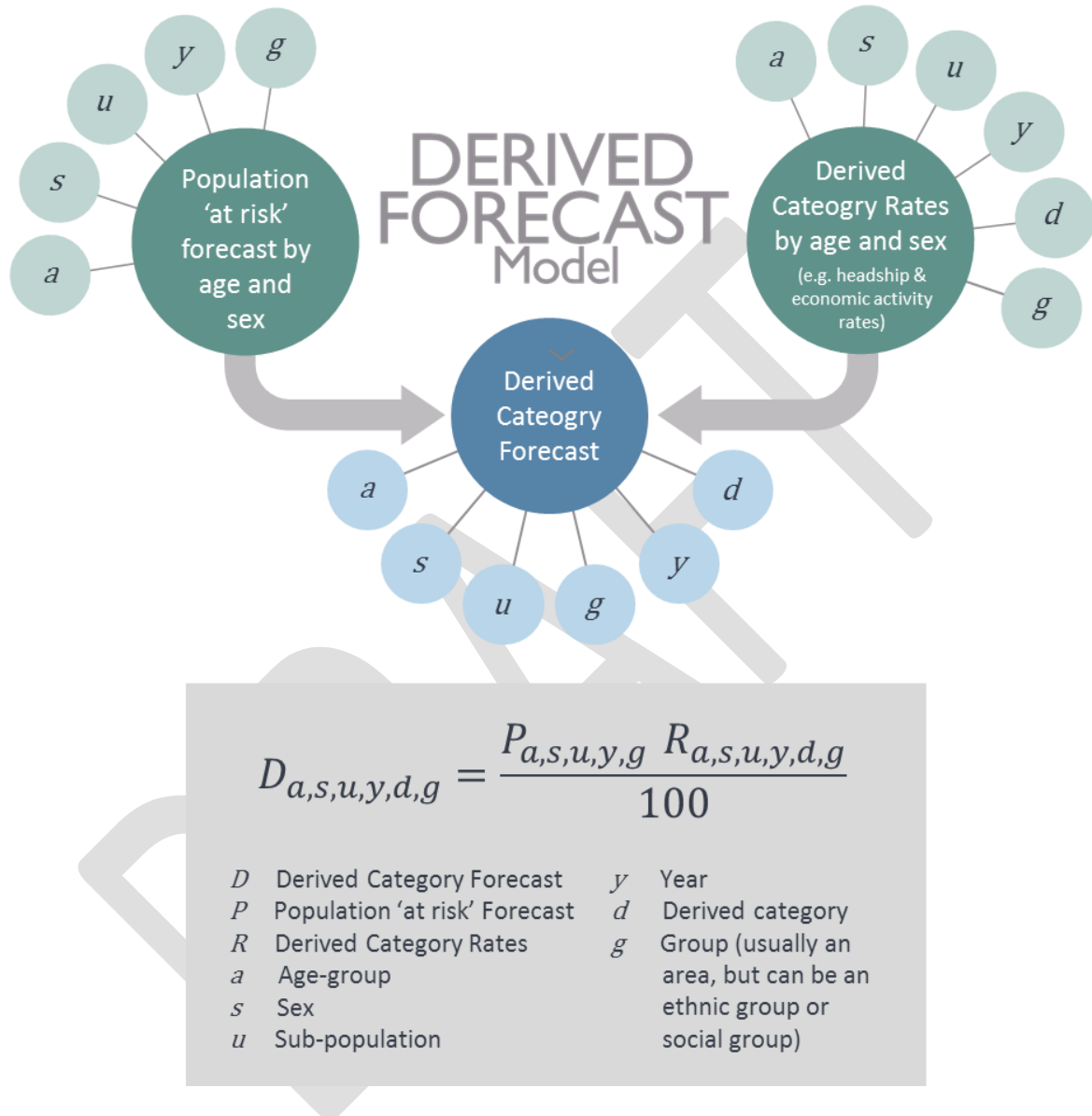


Figure 39: Derived Forecast (DF) methodology

Appendix B

Data Inputs & Assumptions

Introduction

- B.1** Edge Analytics has developed a suite of demographic scenarios for Craven using POPGROUP v.4 and the Derived Forecast model. The POPGROUP suite of demographic models draws data from a number of sources, building an historical picture of population, households, fertility, mortality and migration on which to base its scenario forecasts. Using historical data evidence for 2001–2015, in conjunction with information from ONS sub-national population projections (SNPPs) and DCLG household projections, a series of assumptions have been derived which drive the scenario forecasts.
- B.2** The following scenarios have been produced for Craven and its four sub-district areas:
- SNPP-2014
 - SNPP-2012
 - Natural Change
 - PG Short-Term
 - PG Long-term
 - Jobs-led REM 2014
 - Jobs-led REM 2016
 - Jobs-led REM 2016 SENS1 & SENS2
 - Jobs-led REM Sept 2016 SENS1 & SENS2
(as presented in the addendum)

In the following sections, a narrative on the data inputs and assumptions underpinning the scenarios is presented.

Model Configuration

- B.3** In developing the demographic forecasts, scenarios have been configured for Craven district, in aggregate. Sub-district area¹¹ forecasts have been similarly configured using a combination of Census Output Area (OA) data to derive population and components-of-change statistics. Sub-

¹¹ North Craven, Mid Craven, South Craven and the area of the Yorkshire Dales National Park that falls within Craven.

district assumptions on fertility, mortality, migration and household formation have been used to disaggregate the district-level population growth to each of the four sub-district areas, thereby ensuring consistency with the district-level population total.

- B.4 The assumptions used at sub-district level are detailed alongside the district-level assumptions in the following sections. Unless stated, the assumptions apply at district-level (i.e. Craven as a single area).

Population, Births & Deaths

Population

- B.5 In each scenario, historical population statistics are provided by the mid-year population estimates (MYEs), with all data recorded by single-year of age and sex. These data include the revised MYEs for 2002–2010, which were released by the ONS in May 2013. The revised MYEs provide consistency in the measurement of the components of change (i.e. births, deaths, internal migration and international migration) between the 2001 and 2011 Censuses.
- B.6 In the **SNPP-2012** scenario, the historical MYEs are used up to 2012. From 2012, future population counts are provided by single-year of age and sex to ensure consistency with the trajectory of the ONS 2012-based SNPP.
- B.7 In the **SNPP-2014** scenario, the historical MYEs are used up to 2014. From 2014, future population counts are provided by single-year of age and sex to ensure consistency with the trajectory of the ONS 2014-based SNPP.
- B.8 In the other scenarios, the historical MYEs are used up to 2015.

Births & Fertility

- B.9 In each scenario, historical mid-year to mid-year counts of births by sex have been sourced from the ONS MYEs.

- B.10** In the **SNPP-2012** scenario, historical births are used from 2001/02 to 2011/12. From 2012/13, future counts of births are specified, to ensure consistency with the 2012-based official projection.
- B.11** In the **SNPP-2014** scenario, historical births are used from 2001/02 to 2013/14. From 2014/15, future counts of births are specified, to ensure consistency with the 2014-based official projection.
- B.12** In all other scenarios, historical births are used from 2001/02 to 2014/15. From 2015/16, an area-specific age-specific rate (ASFR) schedule, derived from the ONS 2014-based SNPP, is included in the POPGROUP model assumptions. Long-term assumptions on changes in age-specific fertility rates are taken from the ONS 2014-based SNPP.
- B.13** In combination with the 'population-at-risk' (i.e. all women between the ages of 15–49), the area-specific ASFR and future fertility rate assumptions provide the basis for the calculation of births in each year of the forecast period (i.e. from 2015 onwards).

Deaths & Mortality

- B.14** In each scenario, historical mid-year to mid-year counts of deaths by 5-year age group and sex have been sourced from the ONS MYEs.
- B.15** In the **SNPP-2012** scenario, historical deaths are used from 2001/02 to 2011/12. From 2012/13, future counts of deaths are specified, to ensure consistency with the 2012-based official projection.
- B.16** In the **SNPP-2014** scenario, historical deaths are used from 2001/02 to 2013/14. From 2014/15, future counts of deaths are specified, to ensure consistency with the 2014-based official projection.
- B.17** In all other scenarios, historical deaths are used from 2001/02 to 2014/15. From 2015/16, an area-specific age-specific mortality rate (ASMR) schedule, derived from the ONS 2014-based SNPP, is included in the POPGROUP model assumptions. Long-term assumptions on changes in age-specific mortality rates are taken from the ONS 2014-based SNPP.

- B.18 In combination with the ‘population-at-risk’ (i.e. the whole population), the area-specific ASMR and future mortality rate assumptions provide the basis for the calculation of deaths in each year of the forecast period (i.e. from 2015 onwards).

Migration

Internal Migration

- B.19 In each scenario, historical mid-year to mid-year estimates of internal in- and out-migration by 5-year age group and sex have been sourced from the ‘components of population change’ files that underpin the ONS MYEs. These internal migration flows are estimated using data from the Patient Register (PR), the National Health Service Central Register (NHSCR) and the Higher Education Statistics Agency (HESA).
- B.20 In the **SNPP-2012** scenario, historical counts of internal in and out-migrants are used from 2001/02 to 2011/12. From 2012/13, future counts of migrants are specified, to ensure consistency with the 2012-based official projection.
- B.21 In the **SNPP-2014** scenario, historical counts of internal in and out-migrants are used from 2001/02 to 2013/14. From 2014/15, future counts of migrants are specified, to ensure consistency with the 2014-based official projection.
- B.22 In the **Natural Change** scenario, historical counts of internal in and out-migrants are used from 2001/02 to 2014/15. From 2015/16, internal in- and out-migration flows are set to zero in each year in the forecast period (i.e. no in- or out-migration occurs).
- B.23 In the **PG** scenarios, historical counts of internal in and out-migrants are used from 2001/02 to 2014/15. From 2015/16, future internal migration flows are based on the area-specific historical migration data. In the **PG Short-Term** scenario, a six year internal migration history is used (2009/10 to 2014/15). In the **PG Long-Term** scenario, a 14-year internal migration history is used (2001/02 to 2014/15)
- B.24 In the case of internal in-migration, the ASMiGR schedules are applied to an external ‘reference’ population (i.e. the population ‘at-risk’ of migrating into the area). This is different to the other components (i.e. births, deaths, internal out-migration), where the schedule of rates is applied to

the area-specific population (i.e. the population 'at-risk' of migrating out of the area). The reference population is defined by considering the areas which have historically contributed the majority of migrants into the area. In the case of Craven, it comprises all districts which cumulatively contributed 70% of migrants into the Leeds City Region LEP, and the North, North Yorkshire and East Riding LEP over the 2008/09–2014/15 period.

B.25 In the **Jobs-led** scenarios, historical counts of internal in and out-migrants are used from 2001/02 to 2014/15. From 2015/16, these scenarios then calculate their own internal migration assumptions to ensure an appropriate balance between the population and the targeted increase in the number of jobs/dwellings that is defined in each year of the forecast period. A higher level of net internal migration will occur if there is insufficient population and resident labour force to meet the forecast number of jobs, or if there is insufficient population to support the defined level of housing growth. In the **Jobs-led** scenarios, the profile of internal migrants is defined by an ASMigR schedule, derived from the ONS 2014-based SNPP. In the **SENS1** and **SENS2** variants, the migration balance is determined by schedules that are more heavily weighted towards the labour force age-groups.

International Migration

- B.26** Historical mid-year to mid-year counts of immigration and emigration by 5-year age group and sex have been sourced from the 'components of population change' files that underpin the ONS MYEs. Any 'adjustments' made to the MYEs to account for asylum cases are included in the international migration balance.
- B.27** In all scenarios, future international migrant counts are specified.
- B.28** In the **SNPP-2012** scenario, historical counts of migrants are used from 2001/02 to 2011/12. From 2012/13, the international in- and out-migration counts are drawn directly from the 2012-based official projection.
- B.29** In the **SNPP-2014** scenario, historical counts of migrants are used from 2001/02 to 2013/14. From 2014/15, the international in- and out-migration counts are drawn directly from the 2014-based official projection.

- B.30** In the **Natural Change** scenario, historical counts of international in and out-migrants are used from 2001/02 to 2014/15. From 2015/16, the migration counts for both in- and out-migration are set to zero in each year in the forecast period (i.e. no in- or out-migration occurs).
- B.31** In the **PG** scenarios, historical counts of international in and out-migrants are used from 2001/02 to 2014/15. From 2015/16, future international migration counts are based on the area-specific historical migration data. In the **PG Short-Term** scenarios, a six year history is used (2009/10 to 2014/15). In the **PG Long-Term** scenarios, a 14-year history is used (2001/02 to 2014/15). In both **PG** scenarios, an ASMigR schedule of rates is derived from the relevant migration history and is used to distribute future counts by single year of age.
- B.32** Implied within the international migration component of change in the **PG** scenarios is an 'unattributable population change' (UPC) figure, which ONS identified within its latest mid-year estimate revisions. The POPGROUP model has assigned the UPC to international migration as it is the component with the greatest uncertainty associated with its estimation.
- B.33** In the **Jobs-led** scenarios, historical counts of international in and out-migrants are used from 2001/02 to 2014/15. From 2015/16, international migration counts are taken from the ONS 2014-based SNPP (i.e. counts are consistent with the **SNPP-2014** scenario). An ASMigR schedule of rates from the ONS 2014-based SNPP is used to distribute future counts by single year of age.

Households & Dwellings

- B.34** The 2011 Census defines a household as:
- “one person living alone, or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area.”*
- B.35** In POPGROUP, a dwelling is defined as a unit of accommodation which can either be occupied by one household or vacant.
- B.36** The household and dwelling growth implications of each population growth trajectory have been evaluated through the application of headship rate statistics, communal population statistics and a dwelling vacancy rate. These data assumptions have been sourced from the 2001 and 2011

Censuses and the 2008-based, 2012-based and 2014-based household projection model from the DCLG. The 2014-based model was released by the DCLG in July 2016, and is underpinned by the 2014-based SNPP from ONS.

Household Headship Rates

- B.37** A household headship rate (also known as household representative rate) is the *“probability of anyone in a particular demographic group being classified as being a household representative”*¹².
- B.38** The household headship rates used in the POPGROUP modelling have been taken from the latest DCLG 2014-based household projection model, which is underpinned by the ONS 2014-based SNPP. The DCLG household projections are derived through the application of projected headship rates to a projection of the private household population. The methodology used by DCLG in its household projection models consists of two distinct stages:
- **Stage One** produces the national and local authority projections for the total number of households by sex, age-group and relationship-status group over the projection period.
 - **Stage Two** provides the detailed ‘household-type’ projection by age-group, controlled to the previous Stage One totals.
- B.39** In POPGROUP, the Stage Two headship rates have been applied by 10-year age group in an 8-fold household type classification (Table 33). The following scenario identifiers have been applied:
- **HH-08**: 2008-based DCLG headship rates, scaled to the 2011 DCLG household total, following the original trend thereafter (to ensure a consistent starting point).
 - **HH-12**: 2012-based DCLG headship rates.
 - **HH-14**: 2014-based DCLG headship rates.

Table 33: DCLG Stage Two headship rate classification household type classification

DCLG Category	Description
One person male	One person households: Male
One person female	One person: Female
Couple no child	One family and no others: Couple households: No dependent children

¹² Household Projections 2012-based: Methodological Report. Department for Communities and Local Government (February 2015). <https://www.gov.uk/government/statistics/2012-based-household-projections-methodology>

Cple+adlts no child	A couple and one or more other adults: No dependent children
One child	Households with one dependent child
Two children	Households with two dependent children
Three+ children	Households with three or more dependent children
Other households	Other households with two or more adults

Communal Population Statistics

- B.40** Household projections in POPGROUP exclude the population ‘not-in-households’ (i.e. the communal/institutional population). These data are drawn from the DCLG 2014-based household projections, which use statistics from the 2011 Census. Examples of communal establishments include prisons, residential care homes and student halls of residence.
- B.41** For ages 0–74, the number of people in each age group not-in-households is fixed throughout the forecast period. For ages 75–85+, the proportion of the population not-in-households is recorded. Therefore, the population not-in-households for ages 75–85+ varies across the forecast period depending on the size of the population.

Vacancy Rate

- B.42** The relationship between households and dwellings is modelled using a ‘vacancy rate’, sourced from the 2011 Census¹³. The vacancy rate is calculated using statistics on households (occupied household spaces) and dwellings (shared and unshared).
- B.43** A vacancy rate of 8.9% for Craven has been applied, fixed throughout the forecast period. Using the vacancy rate, the ‘dwelling requirement’ of each household growth trajectory has been evaluated. For each of the sub-district areas, the following vacancy rates have been applied:
- North Craven: 11.1%
 - Mid Craven: 11.5%
 - South Craven: 5.8%
 - YDNP: 16.1%

¹³ Census Table KS401EW: Dwellings, household spaces and accommodation type

Labour Force & Jobs

- B.44 Apart from in the **Jobs-led** scenarios, the labour force and jobs implications of the population growth trajectory are evaluated through the application of three key data items: economic activity rates, an unemployment rate and a commuting ratio.
- B.45 In the **Jobs-led** scenarios, these assumptions are used to determine the level of population growth required by the defined jobs growth trajectory.

Economic Activity Rates

- B.46 The level of labour force participation is recorded in the economic activity rates. Economic activity rates by five year age group (ages 16-75+) and sex have been derived from Census statistics. Between the 2001 and 2011 Censuses, rates of economic activity increased, most notably for females, and males in the older age groups (Figure 40).

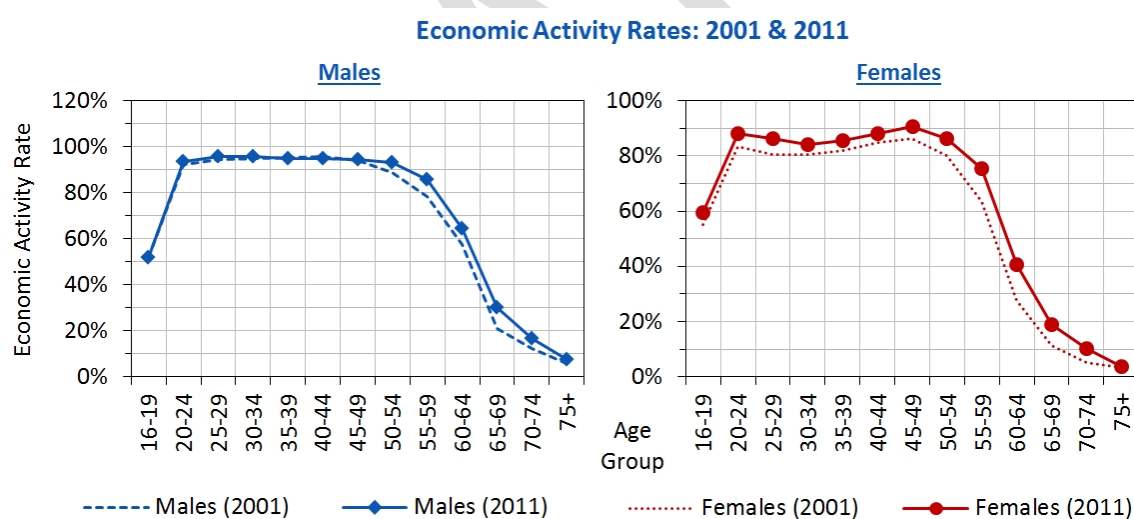


Figure 40: Craven's economic activity rates: 2001 and 2011 Census comparison (source: ONS)

- B.47 The Office for Budget Responsibility (OBR) has undertaken analysis of labour market trends in its 2014 Fiscal Sustainability Report¹⁴. Included within its analysis is a forecast of changing economic activity rates for males and females, extending to a long-term 2066 forecast horizon. This forecast has been used to generate an adjusted set of 2011 Census economic activity rates for Craven. Adjustments have been made over a 20-year period, for the older 60-75+ age groups (Table 34 and Figure 41).

¹⁴ <http://cdn.budgetresponsibility.org.uk/41298-OBR-accessible.pdf>

Table 34: OBR Economic Activity Rate adjustments

OBR1 Economic Activity Rates Change 2011–2032			
Males		Females	
16–19	0%	16–19	0%
20–24	0%	20–24	0%
25–29	0%	25–29	0%
30–34	0%	30–34	0%
35–39	0%	35–39	0%
40–44	0%	40–44	0%
45–49	0%	45–49	0%
50–54	0%	50–54	0%
55–59	0%	55–59	0%
60–64	16%	60–64	72%
65–69	44%	65–69	89%
70–74	26%	70–74	103%
75+	51%	75+	250%

Economic Activity Rates OBR: 2011 & 2032

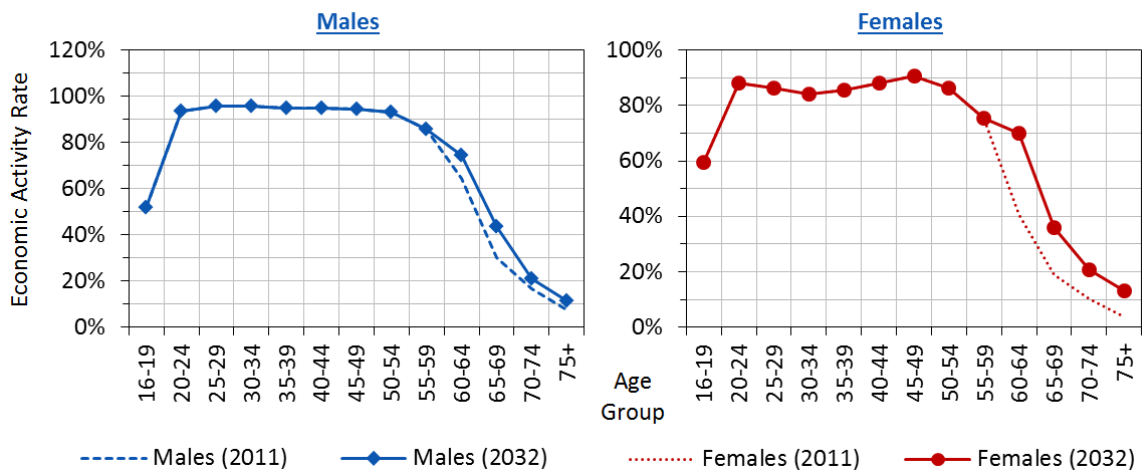


Figure 41: OBR economic activity rate profile for Craven

B.48 As well as the OBR adjustments, in the **Jobs-led REM 2016** scenario, the overall economic activity rate is maintained at the 2011 Census rate of 63% (ages 16–75+).

Commuting Ratio

B.49 The commuting ratio, together with the unemployment rate, controls the balance between the number of workers living in a district (i.e. the resident labour force) and the number of jobs available in the district. A commuting ratio greater than 1.00 indicates that the size of the resident workforce exceeds the number of jobs available in the district, resulting in a net out-

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

- B.50 From the 2011 Census 'Travel to Work' statistics, published by ONS in July 2014, a commuting ratio of 1.01 has been derived for Craven. This is compared to the 2001 Census value in Table 35.

Table 35: Commuting Ratio Comparison

Craven		2001 Census	2011 Census
Workers	<i>a</i>	25,749	27,600
Jobs	<i>b</i>	24,058	27,294
Commuting Ratio	<i>a/b</i>	1.07	1.01

Note: 2001 data from Census Table T101 – UK Travel Flows ; 2011 data from Census Table WU02UK - Location of usual residence and place of work by age .

Unemployment Rate

- B.51 The unemployment rate, together with the commuting ratio, controls the balance between the size of the labour force and the number of jobs available within an area.
- B.52 In all scenarios for Craven, historical unemployment rates are defined up to 2015. From 2015, the unemployment rate to a pre-recession (2004–2007) average of 2.8% by 2020 (Table 36), and is fixed thereafter.

Table 36: Historical unemployment rates 2004–2015

Craven	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Pre-recession Average (2004-07)
Unemployment Rate	2.3	2.4	3.1	3.2	3.2	5.0	5.1	6.4	5.1	4.7	3.5	2.9	2.8

Source: ONS model-based estimates of unemployment, from NOMIS

Craven Demographic Forecasting

District-level Results

Scenario Output 2012–2032

Including HH-14, HH-08 and HH-12 Household & Dwelling Output

Output is provided for the following scenarios:

SNPP-2014

SNPP-2012

PG-Short Term

PG-Long Term

Natural Change

Jobs-led REM 2014

Jobs-led REM 2016

Jobs-led REM 2016 SENS1

Jobs-led REM 2016 SENS2

Contact: kate.staines@edgeanalytics.co.uk

edgeanalytics

Craven Demographic Forecasting

Sub-District Results

Scenario Output 2012–2032

Including HH-14 and HH-08 Household & Dwelling Output

Output is provided for the following scenarios:

SNPP-2014

SNPP-2012

PG Short-Term

PG Long-Term

Natural Change

Jobs-led REM 2014

Jobs-led REM 2016

Jobs-led REM 2016 SENS1

Jobs-led REM 2016 SENS2

Contact: kate.staines@edgeanalytics.co.uk

edgeanalytics

Households & Dwellings (HH-08)

Number of Households	4,371	4,404	4,465	4,491	4,523	4,548	4,574	4,594	4,612	4,631	4,644	4,661	4,678	4,696	4,716	4,735	4,752	4,766	4,777	4,787	4,797
Change in Households over previous year		+33	+62	+25	+32	+26	+26	+20	+19	+18	+14	+17	+17	+18	+20	+19	+17	+14	+11	+10	+10
Number of Dwellings	5,210	5,250	5,324	5,354	5,392	5,422	5,453	5,476	5,498	5,520	5,537	5,557	5,577	5,598	5,622	5,645	5,665	5,682	5,695	5,707	5,719
Change in Dwellings over previous year		+40	+74	+30	+38	+31	+31	+23	+22	+22	+16	+20	+21	+21	+24	+23	+20	+16	+13	+12	+12

Households & Dwellings (HH-08)

Number of Households	4,371	4,402	4,448	4,477	4,509	4,537	4,565	4,587	4,608	4,631	4,650	4,673	4,695	4,718	4,742	4,765	4,787	4,804	4,819	4,834	4,849
Change in Households over previous year		+32	+46	+29	+32	+27	+28	+22	+21	+23	+20	+22	+23	+22	+24	+24	+21	+18	+14	+15	+15
Number of Dwellings	5,210	5,248	5,303	5,338	5,376	5,409	5,442	5,468	5,493	5,521	5,544	5,570	5,598	5,624	5,653	5,681	5,706	5,728	5,745	5,763	5,780
Change in Dwellings over previous year		+38	+55	+35	+38	+33	+33	+26	+25	+28	+23	+26	+27	+27	+28	+28	+26	+21	+17	+18	+18

Households & Dwellings (HH-08)

Number of Households	4,371	4,404	4,465	4,453	4,446	4,433	4,419	4,401	4,386	4,373	4,362	4,352	4,341	4,327	4,314	4,294	4,271	4,244	4,213	4,186	4,158
Change in Households over previous year		+33	+62	-13	-7	-13	-14	-19	-14	-13	-11	-10	-11	-14	-13	-20	-23	-27	-30	-27	-28
Number of Dwellings	5,210	5,250	5,324	5,308	5,300	5,285	5,269	5,246	5,229	5,213	5,200	5,188	5,175	5,159	5,143	5,119	5,091	5,059	5,023	4,991	4,957
Change in Dwellings over previous year		+40	+74	-15	-8	-15	-16	-22	-17	-16	-13	-12	-13	-17	-16	-24	-28	-32	-36	-32	-33

Households & Dwellings (HH-08)

Number of Households	4,371	4,404	4,465	4,499	4,529	4,551	4,575	4,594	4,614	4,634	4,648	4,665	4,684	4,703	4,726	4,749	4,767	4,785	4,799	4,812	4,824
Change in Households over previous year		+33	+62	+34	+30	+23	+23	+20	+20	+20	+14	+17	+18	+19	+23	+23	+19	+17	+14	+13	+12
Number of Dwellings	5,210	5,250	5,324	5,364	5,399	5,426	5,454	5,477	5,501	5,525	5,542	5,562	5,584	5,607	5,634	5,661	5,683	5,704	5,721	5,736	5,750
Change in Dwellings over previous year		+40	+74	+40	+35	+27	+28	+24	+24	+24	+17	+20	+22	+23	+27	+27	+22	+21	+17	+15	+14

Households & Dwellings (HH-08)

Number of Households	4,371	4,404	4,465	4,501	4,543	4,578	4,612	4,641	4,670	4,701	4,724	4,750	4,779	4,807	4,838	4,866	4,892	4,916	4,934	4,953	4,971
Change in Households over previous year		+33	+62	+35	+42	+36	+34	+29	+29	+30	+23	+26	+28	+28	+31	+29	+26	+24	+19	+19	+17
Number of Dwellings	5,210	5,250	5,324	5,366	5,415	5,458	5,498	5,533	5,568	5,604	5,632	5,663	5,697	5,730	5,767	5,801	5,832	5,860	5,883	5,905	5,926
Change in Dwellings over previous year		+40	+74	+42	+50	+43	+40	+35	+35	+36	+28	+32	+34	+33	+37	+34	+31	+28	+22	+23	+21

Jobs-led REM 2014

North Craven

Table for North Craven showing demographic and population data from 2012-13 to 2031-32. Includes rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, and Net Change.

Mid Craven

Table for Mid Craven showing demographic and population data from 2012-13 to 2031-32. Includes rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, and Net Change.

South Craven

Table for South Craven showing demographic and population data from 2012-13 to 2031-32. Includes rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, and Net Change.

YDNP Craven

Table for YDNP Craven showing demographic and population data from 2012-13 to 2031-32. Includes rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, and Net Change.

Jobs-led REM 2016 SENS2

North Craven

Table with columns for years 2012-13 to 2031-32 and rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, Net Change, and Summary of Population estimates/forecasts.

Households & Dwellings (HH-14)

Table showing household and dwelling trends for North Craven, including number of households, dwellings, and changes over time.

Households & Dwellings (HH-08)

Table showing household and dwelling trends for North Craven, including number of households, dwellings, and changes over time.

Mid Craven

Table with columns for years 2012-13 to 2031-32 and rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, Net Change, and Summary of Population estimates/forecasts.

Households & Dwellings (HH-14)

Table showing household and dwelling trends for Mid Craven, including number of households, dwellings, and changes over time.

Households & Dwellings (HH-08)

Table showing household and dwelling trends for Mid Craven, including number of households, dwellings, and changes over time.

South Craven

Table with columns for years 2012-13 to 2031-32 and rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, Net Change, and Summary of Population estimates/forecasts.

Households & Dwellings (HH-14)

Table showing household and dwelling trends for South Craven, including number of households, dwellings, and changes over time.

Households & Dwellings (HH-08)

Table showing household and dwelling trends for South Craven, including number of households, dwellings, and changes over time.

YDNPCraven

Table with columns for years 2012-13 to 2031-32 and rows for Births, Deaths, Natural Change, Net Internal Migration, Net International Migration, Net Migration, Net Change, and Summary of Population estimates/forecasts.

Households & Dwellings (HH-14)

Table showing household and dwelling trends for YDNPCraven, including number of households, dwellings, and changes over time.

Households & Dwellings (HH-08)

Table showing household and dwelling trends for YDNPCraven, including number of households, dwellings, and changes over time.