Richmondshire

SHMA Demographics

January 2017

DRAFT

For the attention of:
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Acknowledgements

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Table of Contents

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1 Introduction

Context & Requirements

1.1 Richmondshire District Council is seeking to establish an up to date assessment of housing need to underpin its Local Plan review and to roll forward the plan horizon to 2035.

1.2 Richmondshire District Council is the Local Planning Authority for the part of the District outside of the Yorkshire Dales National Park (YDNP). The Council adopted its Local Plan 2012–2028 Core Strategy (LPCS) in December 2014, with a housing target of 180 homes per year for the whole District to 2028. The housing target was based on a modified 2008-based population projection, taking into account erroneous international migration assumptions in the Office for National Statistics (ONS) sub-national population projections (SNPP).

1.3 Since the adoption of the Core Strategy, a number of new datasets have been published. In May 2016, the ONS 2014-based SNPP was released, followed by the 2014-based Department for Communities and Local Government (DCLG) household projections in July 2016. Also available are two years of mid-year population statistics (2014 and 2015) for Richmondshire, providing an updated historical time frame from which to draw trend-based assumptions.

1.4 To support the production of a new Strategic Housing Market Assessment (SHMA) for the District, the Council has requested an update to the demographic evidence for Richmondshire using the latest demographic statistics. Forecasts are required for a 2014–2035 plan period. The SHMA is to be formulated in compliance with current National Planning Policy Framework (NPPF)[1] and Planning Practice Guidance (PPG). A key requirement is that the demographic evidence informing the SHMA considers the geography of Richmondshire both within and outside the YDNP, including a scrutiny of the impact of Richmondshire's military population upon growth outcomes.

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[1] http://planningguidance.planningportal.gov.uk/blog/policy/

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Approach

Official Guidelines

1.5   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)[2], with practical advice on assessing the housing needs and establishing housing targets for an area.

1.6   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 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).

1.7   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 employment 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

1.8   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 Richmondshire's designated plan period, 2014–2035.

1.9   The scenario analysis is prefaced with a 'demographic profile' of Richmondshire, illustrating its geographical context, its 'components' of population change (births, deaths, and migration), its historical commuting and migration patterns, and the demographic impact of its military population at Catterick Garrison. A sub-district perspective is included to illustrate how demographic change has varied for the areas both inside and outside the YDNP.

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[2] https://www.local.gov.uk/sites/default/files/documents/objectively-assessed-need-9fb.pdf

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1.10   The starting point of the scenario analysis is the 2014-based SNPP and DCLG household projection for Richmondshire. A number of alternative trend scenarios, using varying migration assumptions, have been developed and are compared to the 2014-based benchmark scenario.

1.11   Household and dwelling growth have been estimated using assumptions from the 2014-based DCLG household projection model for Richmondshire. A comparison of household and dwelling growth implied by the earlier 2008-based and 2012-based DCLG household projection models is also included.

1.12   Scenario results are presented for Richmondshire as a whole, and for the two 'sub-district' areas of Richmondshire: the area that falls within the YDNP, and the area that falls outside the YDNP.

1.13   The relationship between demographic and economic change is examined with a consideration of how Richmondshire's labour force is likely to evolve over the plan period, comparing trend scenario outcomes with the latest economic forecast from the latest September 2016 Regional Economic Model (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.

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2 Area Profile

Geography

2.1   Richmondshire is a predominantly rural district with main settlements at Richmond, Catterick Garrison and Leyburn (Figure 1). With a total area of 1,319 km^2 (509 miles^2) the district is one of the most sparsely populated in England, with a population density of approximately 40/km^2 (103/mile^2).
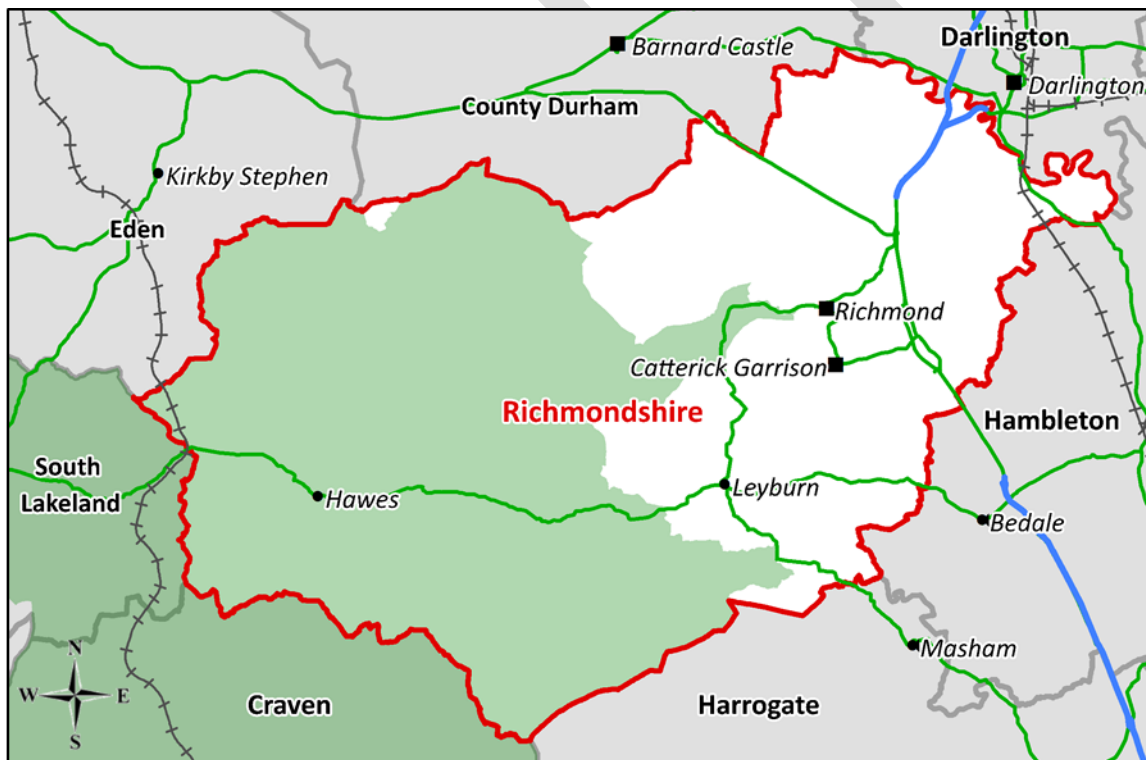
Figure 1: Richmondshire geographical definition

2.2   More than 50% of Richmondshire's geography lies within the YDNP, although just 12% of its population resides within the National Park boundaries (Figure 2).
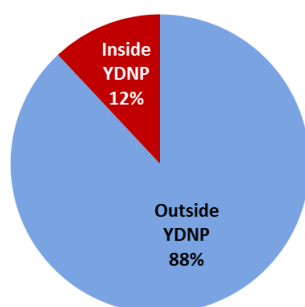
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Figure 2: Richmondshire – population shares in 2014 (Source: ONS)

Population Growth Profile

2.3   The latest 2015 mid-year population estimate (MYE) for Richmondshire suggests a population of 52,520, an 11.6% increase since 2001. This rate of growth is higher than the county, regional, and England averages of 5.6%, 8.3%, and 10.8% respectively (Table 1).

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

Area	Population Change 2001-2015			
	2001	2015	Change	% Change
Richmondshire	47,067	52,510	5,443	11.6%
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, the 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 2011 Census' resident population for Richmondshire was estimated at 53,287 at mid-year 2011, a 13.2% increase from 2001. The 2011 Census population count proved to be *higher* than that suggested by the trajectory of growth from the previous MYEs. Following the 2011 Census, 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. As a result, the revised, final MYEs for Richmondshire are *higher* than the previous MYEs (Figure 3).

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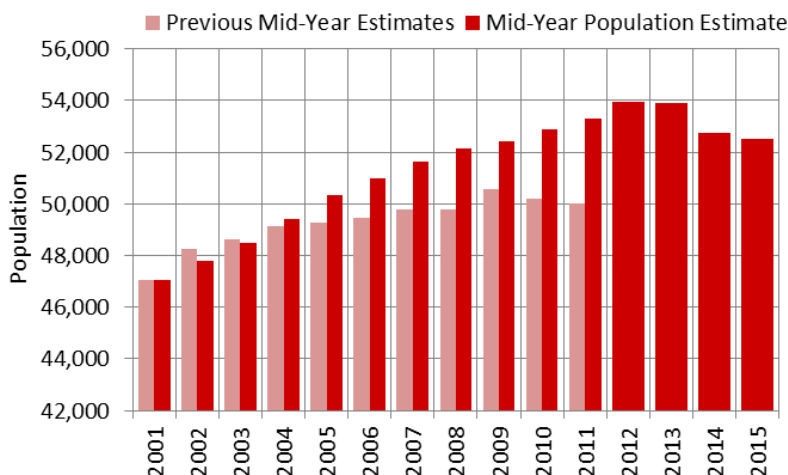
Figure 3: Richmondshire mid-year population estimates, 2001–2015

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 Richmondshire's case, the impact of the UPC component was an uplift to each mid-year population estimate, averaging 336 per year to 2011 (Figure 4).

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

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2.8   Births and deaths are accurately recorded in vital statistics registers, resulting in robust measures of 'natural change' (the difference between births and deaths) in 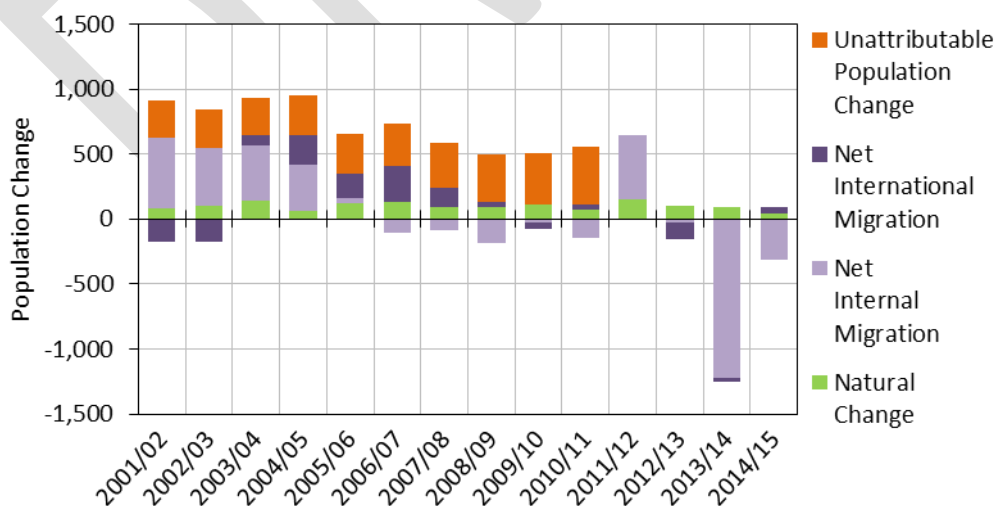an area. In the case of Richmondshire, natural change has historically resulted in a small population increase (i.e. an excess of births over deaths). This positive natural increase has occurred despite Richmondshire's ageing population profile and reflects the importance of the Catterick Garrison military population in maintaining the relatively high birth numbers.

2.9   Internal migration (i.e. migration flows to and from other areas in the UK) is measured using data from the Patient Register (PR), the National Health Service Central Register (NHSCR) and Higher Education Statistics Agency (HESA). Over the 2001/02 and 2014/15 period, internal migration has had a variable impact on population growth, with both net inflows and outflows to 2012/13. In 2013/14, and on a smaller scale in 2014/15, there was a more significant net outflow of population. This is associated with a reduction in military personnel and dependants at the Catterick Garrison; a short-term change that, most recent evidence from military statistics suggest, will have been partially reversed with subsequent replacement of armed forces personnel.

2.10   International migration is the component of change that is hardest to estimate. There is no one data source specifically designed to capture information solely on international migration[3]. The ONS historical migration estimates are derived from a combination of data sources, including the International Passenger Survey (IPS), Higher Education Statistics Agency (HESA) data, GP registration data and National Insurance Registrations (NINo). In Richmondshire, net international migration has contributed to a small level of population growth between 2003/04 and 2008/09, with a negligible impact in the most recent years.

2.11   Given that births, deaths and internal migration are relatively robustly recorded, the UPC component of the MYEs could be related to the difficulties associated with the estimation of international migration i.e. the balance between immigration and emigration flows to and from Richmondshire. With the UPC adjustment included within the international migration component of change, it would appear that immigration has been the main driver of growth in Richmondshire (Figure 5). However, the lack of growth due to international migration since 2011 suggests the UPC component is more likely associated with other factors, such as the year-on- year estimation of the army at Catterick Garrison (and their dependents) and/or the associated

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3 Long-Term International Migration Estimates Methodology Document, 1991 onwards (August 2016) ONS

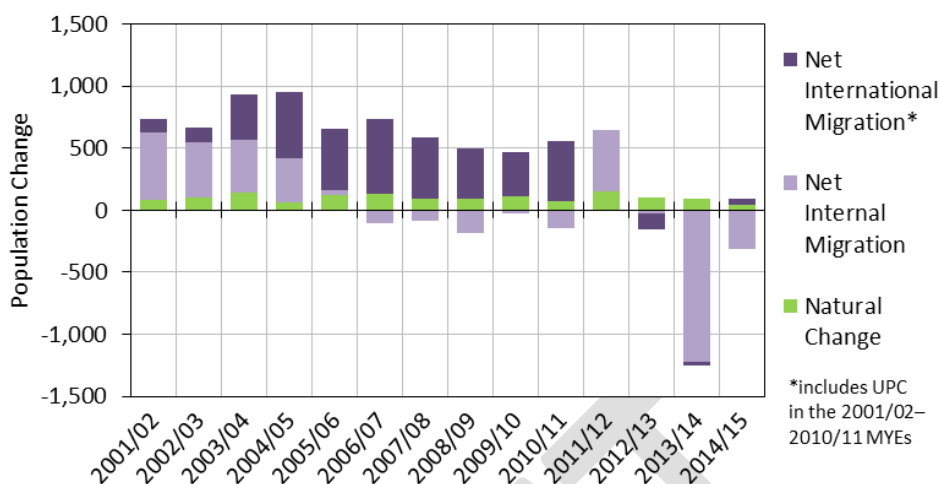edge analytics

robustness of the 2001 Census estimate.

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

2.12   The treatment of the UPC element in setting assumptions for future population growth has important implications for the development of trend-based scenarios for Richmondshire. This is explored in more detail in Section 4.

Age-Structure

2.13   When considering future housing needs and the size and shape of the resident labour force, the age structure of Richmondshire's population is a key factor. Richmondshire's age profile is skewed by the large military population, particularly by the number of young adult males (aged 20–34) associated with the army at Catterick Garrison. Figure 6 compares Richmondshire's age profile to the county, region, and England profiles, using the 2014 base year of the latest ONS sub-national projections.

2.14   Because of the presence of the Armed Forces population, Richmondshire has a younger age profile than North Yorkshire in total, with more similarity with the more youthful age profiles of the Yorkshire & Humber region and England as a whole. Richmondshire has an Old Age Dependency ratio of 30, compared to a national average of 27 for England, 46 for North Yorkshire and 40 for the Yorkshire and Humber region. This means that the 65+ population of Richmondshire is equivalent to 30% of the 15–64 age-group population, compared to 27% across England in aggregate, 46% in North Yorkshire and 40% in the region. However, the impact of

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ageing locally will mean that the older population in Richmondshire is dependent on a much smaller younger population if the military population was removed from this equation.
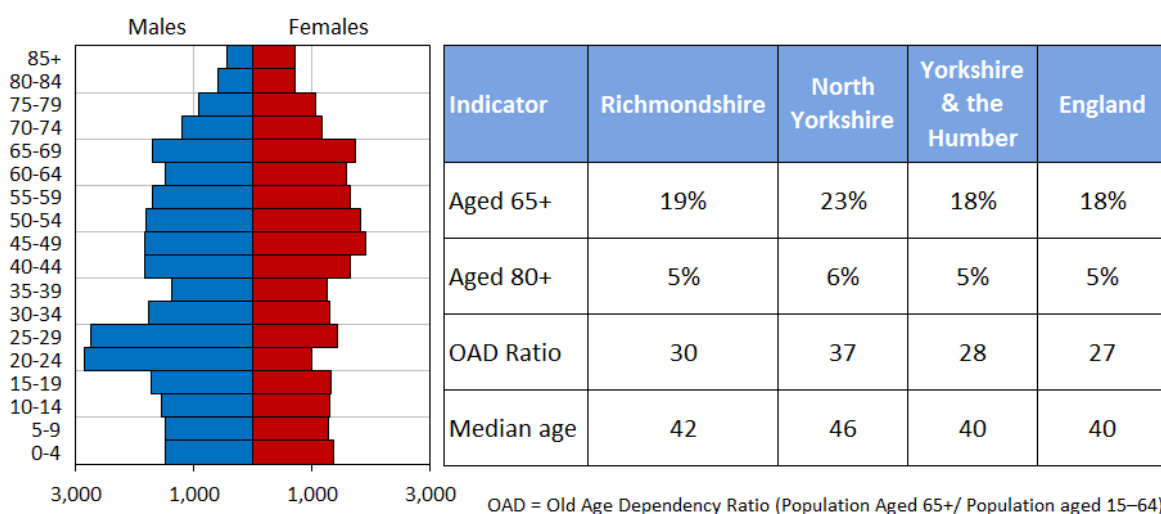

Indicator	Richmondshire	North Yorkshire	Yorkshire & the Humber	England
Aged 65+	19%	23%	18%	18%
Aged 80+	5%	6%	5%	5%
OAD Ratio	30	37	28	27
Median age	42	46	40	40

OAD = Old Age Dependency Ratio (Population Aged 65+/ Population aged 15–64)

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

Internal Migration

2.15 Internal migration statistics measure the in-flows and out-flows of population to and from Richmondshire, from and to elsewhere in the UK. The average annual growth of Richmondshire's population as a result of internal migration exchanges has been approximately +207 per year since 2001/02, with significant differences between the start and end of the period (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.

2.16 The GP registration statistics, upon which the internal migration data is based, record a move when a person joins the armed forces and when they leave, but does not record inter-area transfers. However, dependants of armed forces personnel are captured by GP registration statistics, if they register with a GP at each move.

2.17 During the 2001/02–2014/15 time period, internal in-migration averaged 3,344 per year, with internal out-migration averaging 3,330 people per year. In 2013/14, a fall in in-migration was accompanied by a sharp rise in out-migration, with the net out-migration reducing in 2014/15. The redeployment of armed forces personnel in 2013/14 will have had two effects: a number of dependants moving with armed forces personnel but also the possible transfer of armed forces personnel to civilian status outside Richmondshire.

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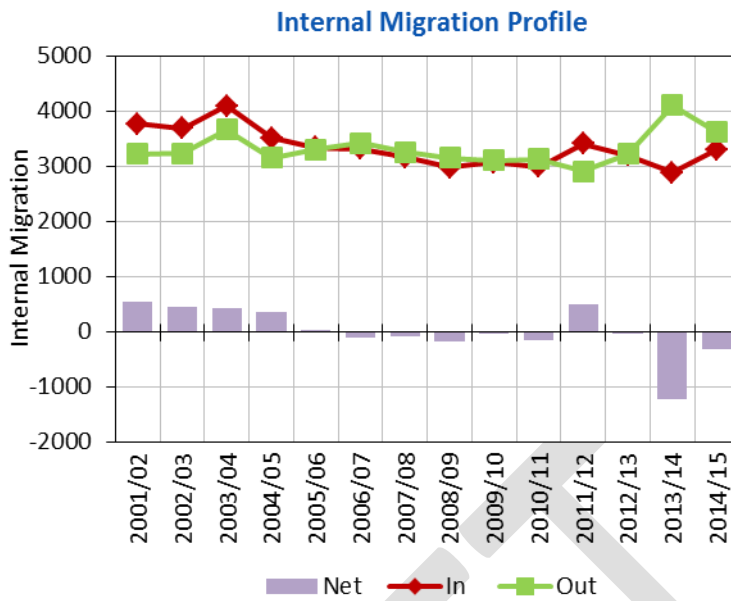
Figure 7: Richmondshire internal migration profile, 2001/02–2014/15 (source: ONS)

2.18   In terms of migration linkages between Richmondshire and surrounding areas, the annual average largest *positive* <u>net</u> exchanges (i.e. a higher inflow than outflow) have been with the Bradford, Harrogate and Hambleton local authority districts (Figure 8). For the annual average <u>net</u> *outflow* exchange, the dominant flow has been between Richmondshire and Darlington (Figure 8).
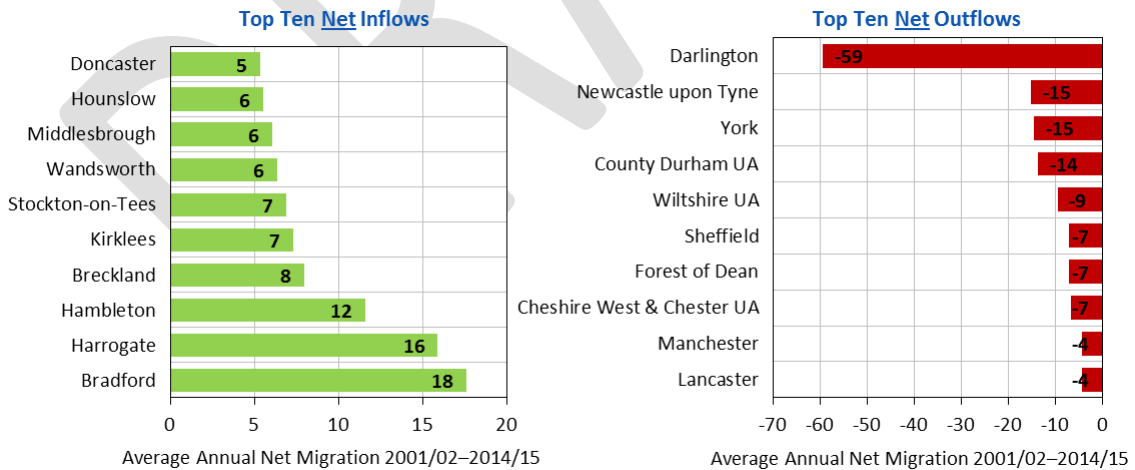
Figure 8: Average annual top-10 internal migration net inflows & outflows 2001/02–2014/15 (source: ONS)

2.19   In terms of the <u>gross</u> flows (Table 2), the greatest average annual inflows and outflows have been from/to Hambleton, Darlington and County Durham.

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Table 2: Top ten internal migration inflows and outflows 2001/02–2014/15

Top Ten Inflows	Average Annual 2001/02–2014/15	Top Ten Outflows	Average Annual 2001/02–2014/15
Hambleton	241	Darlington	272
Darlington	213	Hambleton	230
County Durham UA	150	County Durham UA	164
Harrogate	106	Harrogate	90
Leeds	78	Leeds	79
Stockton-on-Tees	54	York	63
York	49	Newcastle upon Tyne	56
Newcastle upon Tyne	41	Wiltshire UA	48
Bradford	40	Stockton-on-Tees	47
East Riding of Yorkshire	40	East Riding of Yorkshire	35

2.20   The age profile of migration reflects the most recent changes associated with the reduction in Armed Forces personnel at the Catterick Garrison, with the largest average annual net outflow in the 20–34 age-groups and lower net outflow in the 10–19 and 35–39 age-groups (Figure 9). A small but positive net inflow has been experienced in each of the 40+ age-groups, with the exception of 70–74 year-olds.



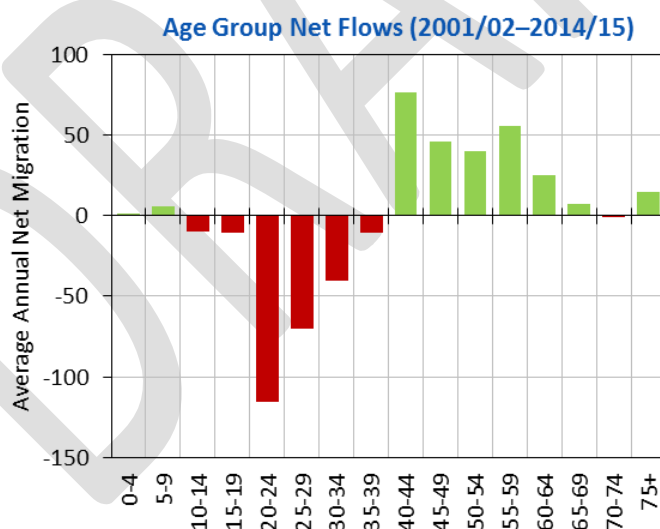Figure 9: Richmondshire internal migration age profile, 2001/02–2014/15 (source: ONS)

International Migration

2.21   National Insurance Number (NINo) registrations provide an indication of the number of foreign nationals that have registered to work in Richmondshire since 2002 (Figure 10). The largest proportion of registrations since 2006 is associated with migrants of Nepalese origin; part of

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Catterick Garrison's Gurkha Regiment (although some Gurkha veterans and their families have been returning in recent years). Smaller numbers have been associated with migrant workers from the EU and New Commonwealth countries.

EU13 refers to countries that joined the European Union in 2004. Other EU refers to all other European Union countries
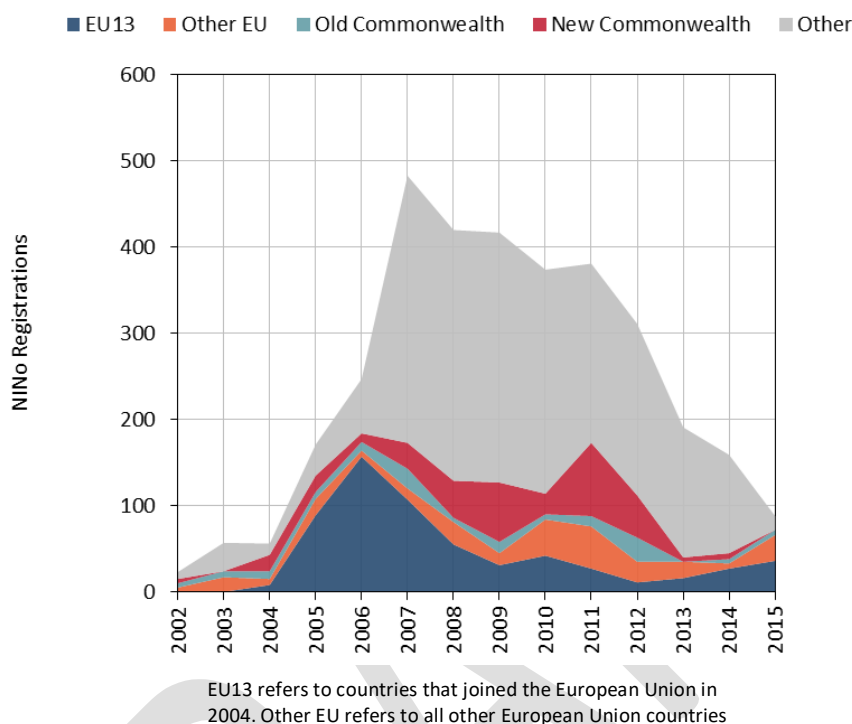
Figure 10: NINo Registrations in Richmondshire, 2002–2015 (Source: DWP)

Commuting Flows

2.22   With regards to travel-to-work patterns, the 2011 Census recorded 27,795 workers aged 16–74 living within Richmondshire (Table 3) and 28,130 workers aged 16–74 working within Richmondshire (Table 4).

2.23   Approximately 74.0% of Richmondshire's labour force both lives and works within the district, with 7.4% commuting out to neighbouring Hambleton, 5% to Darlington and 2.3% to County Durham (Table 3). In terms of employment, the majority of Richmondshire's jobs are taken up by the local workforce (73.1%), with 4.6% of workers commuting from Darlington, 3.0% from Hambleton and 2.8% from County Durham (Table 4). 15.1% come from Scotland, which is likely linked to weekly commuting of military personnel from major recruiting areas.

Table 3: Richmondshire 2011 Census commuting flows: workers (ages 16–74)

Where do people who live in Richmondshire work?			Source:ONS
Live	**Work**	**Number**	**%**
Richmondshire	Richmondshire	20,571	74.0%
	Hambleton	2,048	7.4%
	Darlington	1,382	5.0%
	County Durham	635	2.3%
	Other	3,159	11.4%
	Workers	**27,795**	**100.0%**

Table 4: Richmondshire 2011 Census commuting flows: employment (ages 16–74)

Where do people who work in Richmondshire live?			Source: ONS
Live	**Work**	**Number**	**%**
Richmondshire	Richmondshire	20,571	73.1%
Darlington		1,283	4.6%
Hambleton		845	3.0%
County Durham		774	2.8%
Harrogate		398	1.4%
Scotland		4,259	15.1%
	Employment	**28,130**	**100.0%**

2.24   Data from successive Censuses reveal that the balance between 'workers' and 'employment' has changed over the 2001–2011 decade with a smaller increase in the number of resident workers (+3,689) compared to employment (+6,454) (Table 5). In 2011, Richmondshire had a small inward net commuting ratio of 0.99, compared to an outward net commuting balance of 1.11 in 2001.

Table 5: Richmondshire Census travel-to-work commuting ratios, ages 16–74 (source: ONS)

Richmondshire		2001 Census	2011 Census
Workers	a	24,106	27,795
Employment	b	21,676	28,130
Commuting Ratio	a/b	**1.11**	**0.99**

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

2.25   Richmondshire's growth since 2001 has been a composite of population change across the areas that sit within and outside the YDNP (Figure 11) (note: at the sub-district level, population

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estimates are available to mid-year 2014 only). With 88% of the district's population, the area outside the YDNP has seen the majority of population growth in absolute terms, equivalent to a 14% rise 2001–2014.
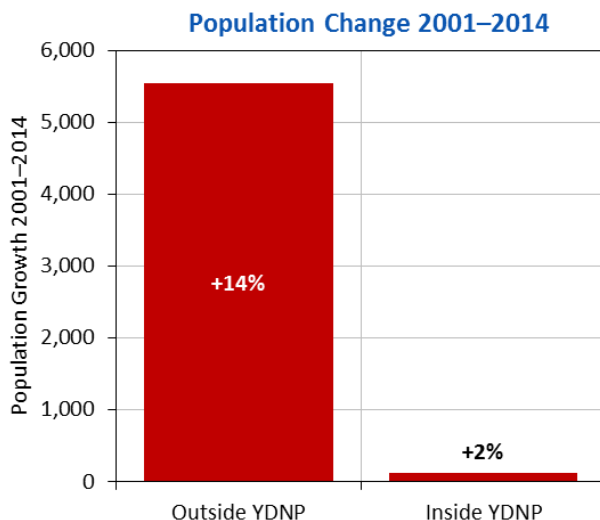
Figure 11: Richmondshire sub-district population change 2001–2014

2.26   The Richmondshire area within the YDNP has experienced relatively little growth in comparison, a 1.9% increase since 2001 (Figure 12).
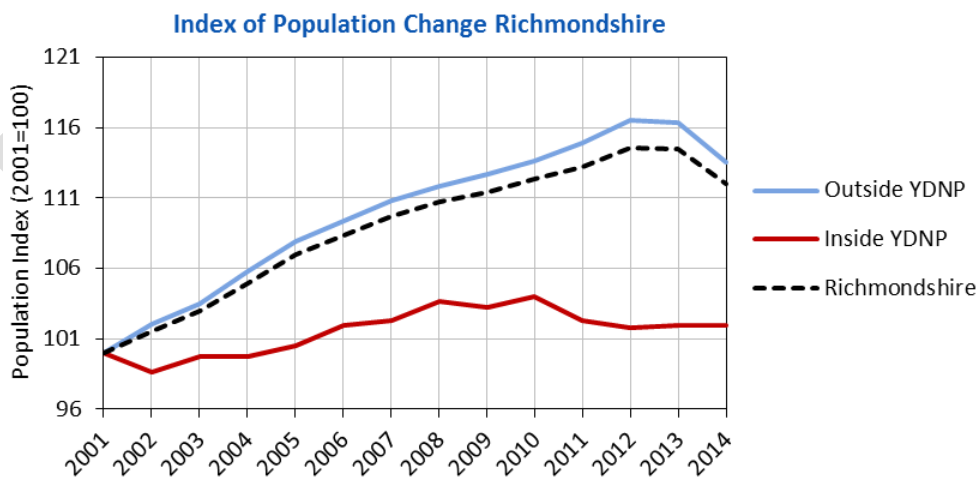
Figure 12: Richmondshire sub-districts: index of population change 2001–2014

2.27   The components of population change illustrate how net migration (incorporating the UPC adjustment) and natural change have contributed to population growth in each of the two sub-district areas (Figure 13). Within the YDNP geography, natural change and net migration have effectively balanced each other between 2001 and 2014. Within the portion of Richmondshire

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outside the YDNP, natural change has contributed approximately 24% to population growth since 2001, with net in-migration, including the UPC adjustment, accounting for the remainder.

Components of Change 2001–2014
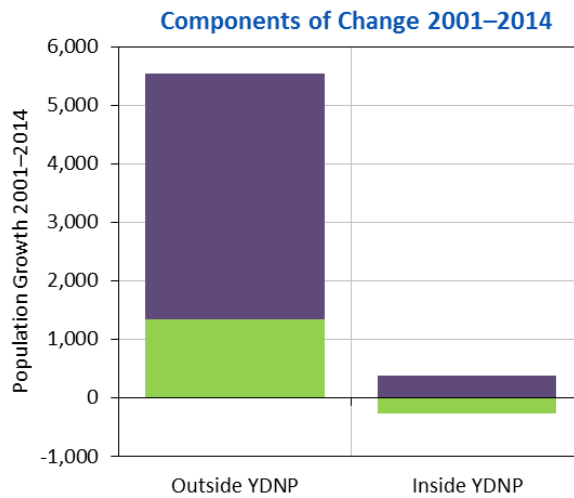
Figure 13: Richmondshire sub-district components of population change 2001–2014

2.28   Excluding the 2013/14 year, when large-scale military redeployment occurred, population growth in Richmondshire has been concentrated in the Scotton, Hornby Castle, Hipswell and Catterick wards (Figure 14).
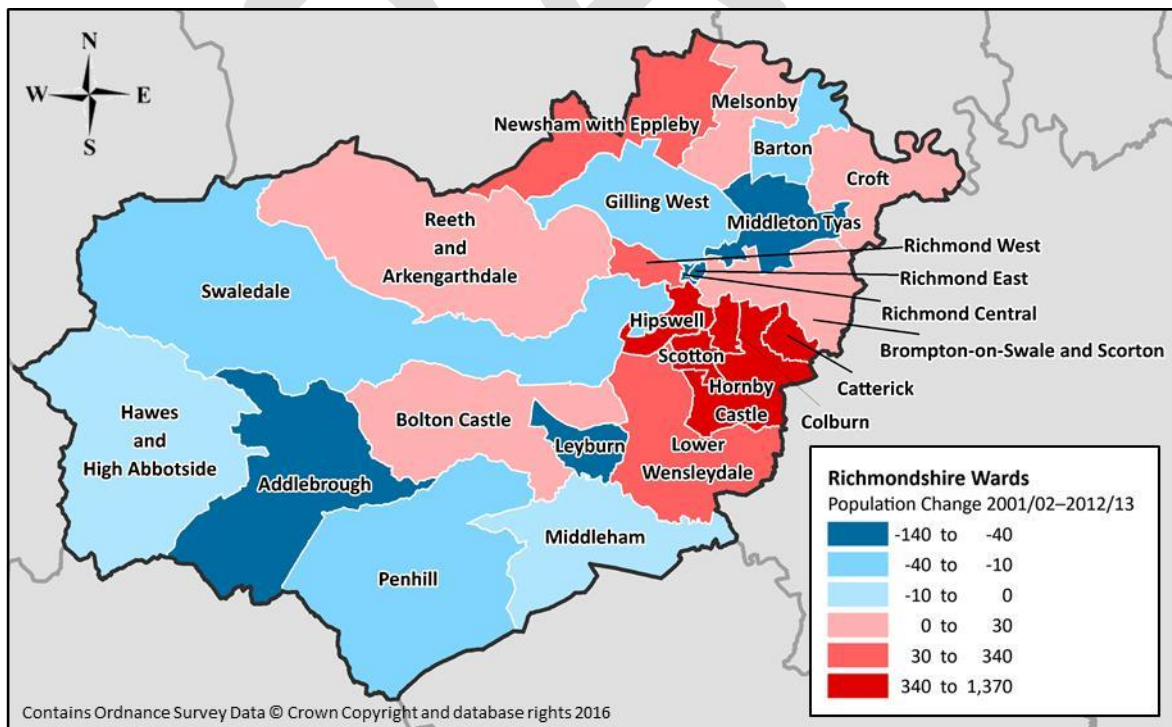
Figure 14: Ward-level population growth (excluding UPC) 2001/02–2012/13

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2.29   There have been several changes over the historical period that will have contributed to the growth profiles of the Catterick, Scotton and Hipswell wards. In 2001, the military complement was greatly reduced and military homes were sold off. Military barracks were also redeveloped, which affected overall capacity. In 2009/10, 19 Brigade was replaced by the larger 4 Brigade, resulting in an increase in the number of military personnel and their dependents. In Hornby Castle a large housing development, completed around 2005, is likely to be the main driver of population growth.

2.30   Hipswell ward made the largest contribution to the 'natural change' component of population growth, with Scotton, Colburn, Catterick and Hornby Castle wards also making positive contributions. All other wards, both inside and outside the YDNP, experienced little or negative growth due to natural change, with an excess of deaths over births. Births associated with military personnel make a significant contribution to the annual growth profile of Richmondshire, although these children do not age far into the population before they are 'replaced' through redeployment to and from the district.

2.31   Whilst ward-level migration statistics are not directly available, an estimate of the impact of migration (excluding the UPC element) is derived as the residual after natural change is removed from population change for the 2001/02–2012/13 period. Colburn contributed approximately 19% to migration growth 2001/02–2012/13 and Scotton 15%. Catterick (containing Marne Barracks, which has seen a large increase in personnel and dependants over the period covered), Hornby Castle and Leyburn each contributed 10–11%. All other wards contributed 6% or less to Richmondshire's migration growth profile over this time period, with some wards showing negative net migration over this historical time period. Migration associated with the movement of military personnel has a significant influence upon Richmondshire's annual growth profile.

Armed Forces Population

2.32   Richmondshire is home to one of the UK's largest concentrations of military personnel at Catterick Garrison. Within the relatively sparsely populated geography of Richmondshire, the military presence has a significant impact upon the district's population profile, its migration balance and the profile of economic activity.

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2.33   The recent decline in Richmondshire's population estimate (see Figure 3 on page 6) is linked with the movement of personnel from Catterick Garrison. The most recent evidence from Ministry of Defence (MOD) statistics suggests that this short-term decline is quickly being reversed with new deployments to the site during 2016 (Figure 15).

2.34   In July 2016 there were an estimated 7,648 civilian and military personnel employed at the Catterick Garrison site in Richmondshire, 7,103 (93%) of which are male, 545 (7%) female. This is a total of personnel *employed* and is not a record of those resident in Richmondshire.
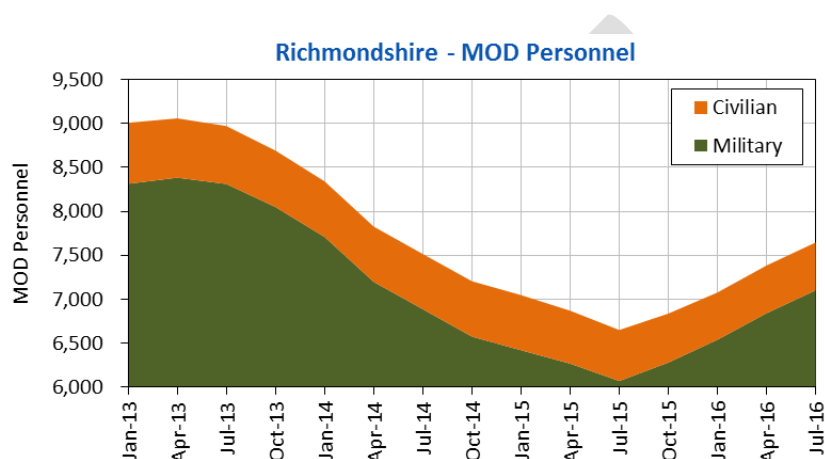
Figure 15: Richmondshire: MOD personnel summary (source: Ministry of Defence[4])

2.35   Whilst it relates to a period that is now five years prior to the most recent MOD statistics, the 2011 Census provided the most detailed data on Richmondshire's armed forces personnel and their dependents, including complementary data on workplace-based statistics. The resident armed forces population was estimated at 5,035 in 2011 (Census Table QS121EW).

2.36   Approximately 65% of the resident armed forces live in communal establishments (Figure 16), with the remainder in household residences, primarily Service Family Accommodation (SFA).

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[4] www.gov.uk/government/collections/location-of-all-uk-regular-service-and-civilian-personnel-quarterly-statistics-index

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Armed Forces: Resident Population
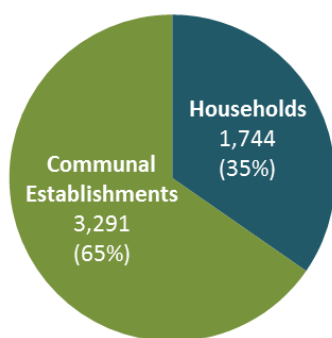
Figure 16: Richmondshire: Armed Forces resident
population by residence type (Source: 2011 Census)

2.37   The 2011 Census also indicated that there were a total of 4,894 people living within household accommodation within which armed forces personnel were resident (Census Table AF002). This population total included both military personnel and their dependents. This number is consistent with the estimate derived in the previous demographic analysis for Richmondshire, which identified a total of 4,868 armed forces personnel and dependants in SFA premises.[5]

2.38   The workplace statistics from the 2011 Census estimated a total of 6,967 armed forces personnel working within Richmondshire (96% of which were male). This compares to the MOD 2016 total of 7,648 for military personnel.

2.39   Within the ONS mid-year population estimates, adjustments are made for special population groups such as school boarders, prisoners and armed forces. In the mid-year estimation methodology, these special population groups are treated separately from the rest of the population, removing them from the normal 'cohort-component' ageing calculation and treating them as a 'static' population that is not subject to the normal fertility, mortality and migration assumptions.

2.40   Currently, ONS maintains a special population of 5,998 armed forces personnel in its mid-year estimate and sub-national population projection for Richmondshire. This population has a distinctive age and sex profile, characterised by a large number of young males and a much smaller female population (Figure 17). When population estimates and projections are derived, the armed forces population remains fixed; it does not 'age' in line with the normal application of the cohort-component model and does not contribute to fertility, mortality and migration events of the local population.

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[5] Richmondshire – Scrutiny of Population Estimates and Projections. Edge Analytics, March 2012

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Richmondshire: ONS Special Population
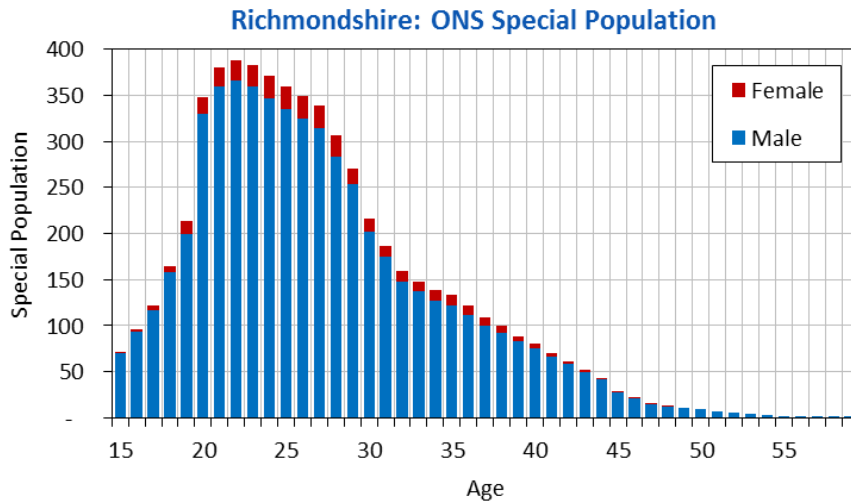
Figure 17: Richmondshire: Special Population (Source: ONS)

2.41   In estimating the population that resides within households, the size of the population living within communal establishments is a key consideration. DCLG's household projection methodology provides a communal establishment population for all age-groups in Richmondshire (Figure 18). For the 15–59 age-ranges, 4,330 males and 227 females have been identified as living in communal accommodation. This total will exclude any military personnel and their dependants that are resident in service family accommodation (SFA).

Richmondshire: Communal Establishment Population
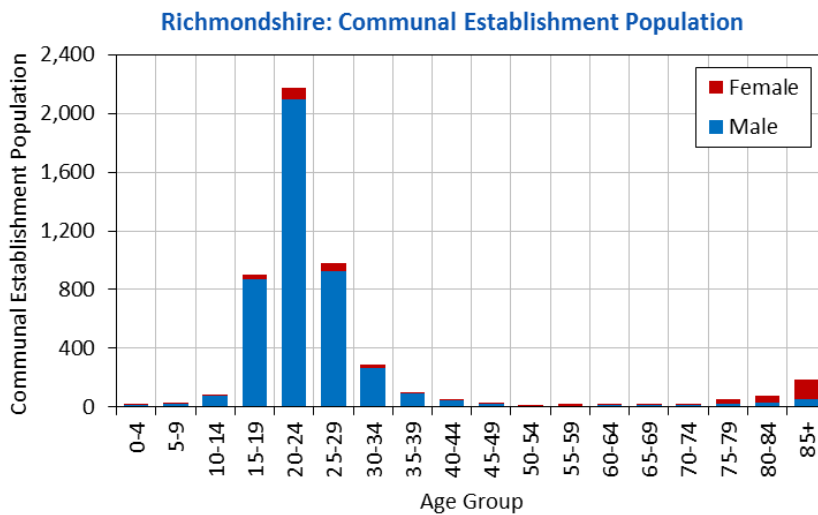
Figure 18: Richmondshire: Communal Establishment Population (Source: Census 2011)

2.42   The relatively young age profile of the Garrison population, and the substantial number of family units that exist at the site, means that the military population at Catterick Garrison will contribute a large number of births to Richmondshire's annual population growth (all births to

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military families in Richmondshire are included in the historical natural change statistics). The Garrison not only maintains a relatively low median age compared to the rest of North Yorkshire but also drives the rate of 'natural change' in Richmondshire's population.

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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 19).
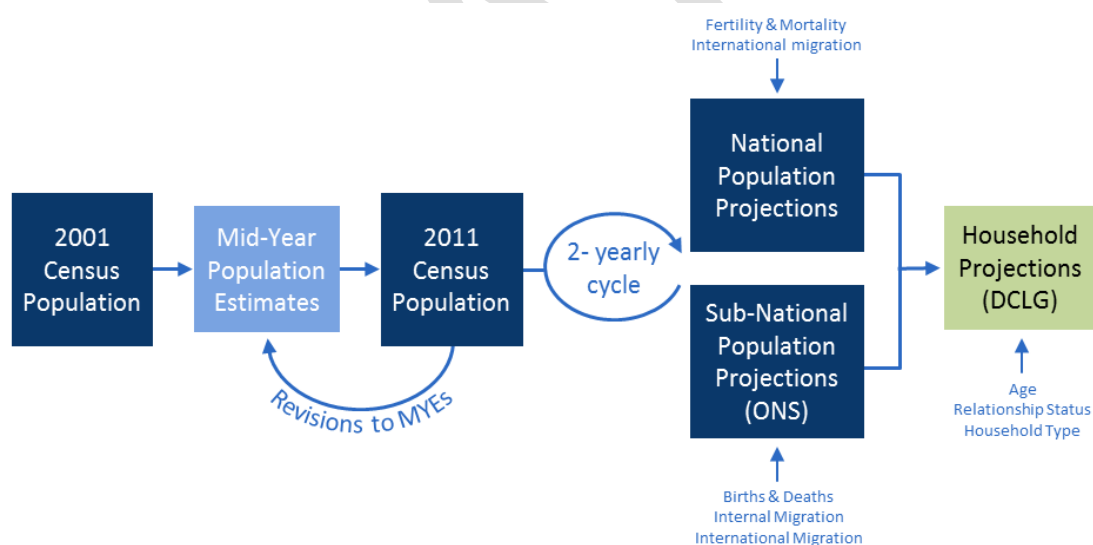
Figure 19: Official Statistics – population and households

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 2015[6].

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[6] 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 Richmondshire, 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 May 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 migration[7].

3.8   Figure 20 presents the ONS population projections series for Richmondshire. Under the latest, 2014-based SNPP, the population of Richmondshire is expected to decline by 1,319 over the 25-year projection period (2014–2039), a reduction of -2.5%. This projection includes the maintenance of a static armed forces population of approximately 6,000 personnel.

3.9   This profile of growth is different to that estimated under each of the previous SNPPs. The previous 2012-based projection estimated a small level of growth over its 25-year projection period, at +2.6% 2012–2037. The earlier 2004-, 2006- and 2008-based SNPPs project substantially higher rates of growth, a likely reflection of the inappropriate measures of historical international migration that have now been superseded by new and improved evidence.

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[7] http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/bulletins/subnationalpopulationprojectionsforengland/2014basedprojections

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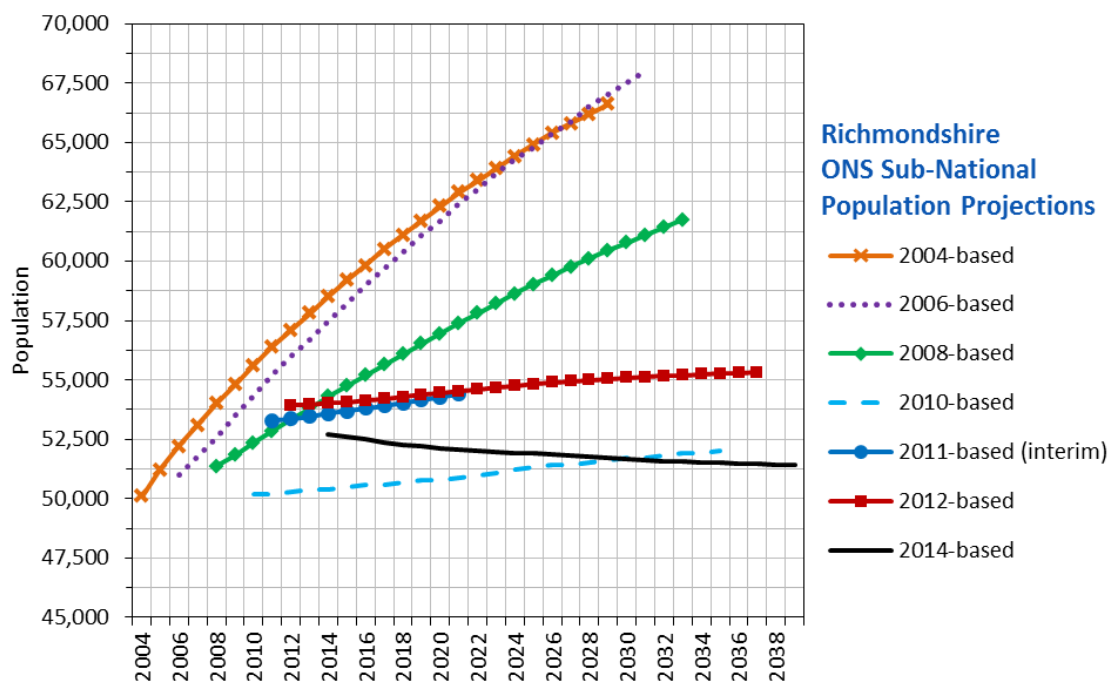
Figure 20: Official Projections for Richmondshire (Source: ONS)

3.10   The population decline implied by the 2014-based SNPP for Richmondshire presents a different profile of growth when compared to the county of North Yorkshire, for which the 2014-based SNPP projects a 4.5% growth in the population to 2039 (Table 6).

Table 6: SNPP-2014 growth comparisons (Source: ONS)

Area	Population			
	2014	2039	Change	% Change
Richmondshire	52,729	51,410	-1,319	-2.5%
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 Richmondshire are presented in Figure 21, with the historical components of change for 2001/02 –2013/14 included for comparison. The historical data presents a very different profile to the projected components of change. As the population ages, natural change is projected to have an increasingly negative impact on population growth throughout the SNPP projection period. Internal migration is projected to contribute to a small annual net gain towards the end of the

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projection period (after an initial loss), with international migration contributing little to population change.
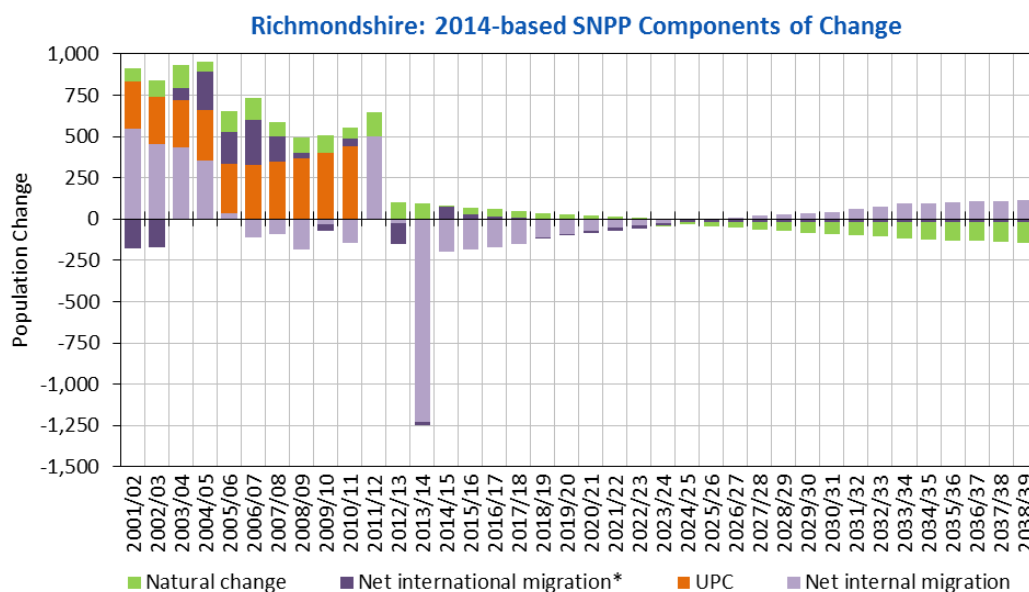
Figure 21: Historical and 2014-based SNPP components of change (Source: ONS)

3.12   To illustrate how the ONS assumptions on demographic change in Richmondshire compare with the historical evidence, the annual average natural change, net internal and international migration change for the 2014-based projection are compared to the 6-year and 13-year historical averages prior to the 2014 base year (Table 7).

Table 7: Richmondshire 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	102	103	-38
Net Internal Migration	-185	40	-7
Net International Migration (+UPC)	183	293	-8
Total Net Migration	-1	333	-15
UPC*	202	259	-

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

3.13   Natural change is projected to have an overall negative impact on population growth (-38 per year), in contrast to the historical trends over both the 6-year and 13-year periods. The projected negative effect of internal migration (-7 per year) is estimated at a level that is *higher* than the

6-year historical average (-185 per year) which is skewed by the large net inflow in 2013/14. The longer-term average suggests a net growth of +40 per year. International migration is projected to result in a small net emigration over the 25-year period (-8 per year), compared to a positive impact over both the 6-year and 13-year periods (whether UPC is included or excluded).

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 the different underpinning population projections.

3.17   The 2014-based DCLG household projection model for Richmondshire estimates that the number of households will remain fairly constant over the 2014–2039 projection period (Figure 22), increasing by only 104 (0.5%). This estimate assumes a relatively static population of 4,557 living in armed forces barracks accommodation.

3.18   Under the previous 2012-based model, household growth was projected to be higher, at 6.9% between 2012 and 2037. Under the earlier 2008-based model, the significantly higher population growth expectation, coupled with household formation rates that suggested a more rapid reduction in average household size, resulted in household growth of 28.6% 2008–2033.

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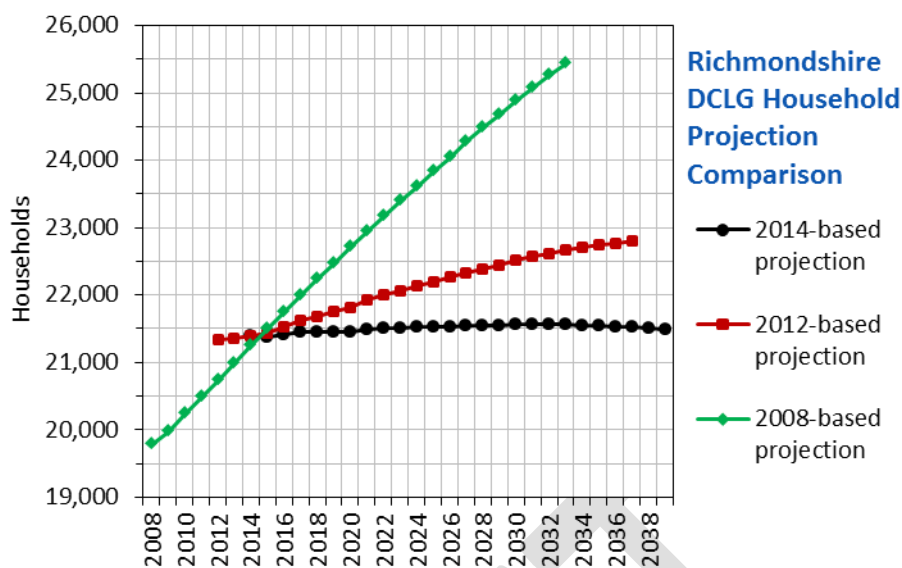
Figure 22: Household growth 2014 based DCLG household projections for Richmondshire (source: DCLG)

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 2014–2035 plan period for Richmondshire, the 2014-based household projection model suggests an increase of 151 households, approximately 7 per year (Table 8). Over the same time period, the 2014-based SNPP projects a 2.3% reduction in the population, equivalent to a 3.2% reduction in the household population.

Table 8: Richmondshire 'starting point' estimates (source: ONS and DCLG)

	Variable	2014	2035	Change	% Change	Average (per year)
2014-based SNPP	Population	52,729	51,518	-1,211	-2.3%	-58
2014-based DCLG Model	Households	21,393	21,544	151	0.7%	7
	Household Population	47,673	46,151	-1,522	-3.2%	-72
	Average Household Size	2.23	2.14	-0.09	-3.9%	0

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.

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4 Demographic Scenarios

Introduction

4.1   There is no single definitive view on the likely level of growth expected in Richmondshire. 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 Richmondshire, using POPGROUP technology. Scenarios have been developed for Richmondshire as a whole, for the Local Plan area *outside* the YDNP, and the area *inside* the YDNP.

4.3   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, utilising the latest demographic statistics for Richmondshire, with future migration assumptions based on a 'short-term' (6-year) and a 'long-term' (13-year) historical period.

4.4   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). In Section 5, the labour force and job growth implications of the demographic scenarios are compared with economic forecasts from the latest (September 2016) Regional Economic Model (REM), considering key assumptions on Richmondshire's future economic activity rates, level of unemployment and balance of commuting between resident workers and local jobs.

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Demographic Scenario Definition

4.5   The 'starting point' estimate of housing need is provided by the **SNPP-2014** scenario, which replicates the latest 2014-based ONS population and DCLG household projections for Richmondshire. The **SNPP-2012** scenario, which replicates the earlier ONS 2012-based SNPP is included for comparison.

4.6   The 2014-based SNPP from ONS is a trend-based projection that uses demographic assumptions based on up to six years historical evidence preceding 2014[8]. 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 recent changes to the armed forces population and the possible impact this had on the latest 2014- based SNPP emphasise the importance of considering alternative growth outcomes in the objective assessment of housing need.

4.7   Therefore, a range of 'alternative trend' scenarios has been developed, in which variant migration assumptions have been applied, based on Richmondshire's historical migration data (2001–2015). The 'short-term' scenarios draw their migration assumptions from the most recent six years of historical data (2009/10–2014/15), with the 'long-term' scenarios utilising the full 14- year migration history.

4.8   In each of the alternative trend scenarios, the 2013/14 MYE has been ignored in the calibration of future *internal* migration assumptions, due to its association with the reduction in personnel and dependants at the Catterick Garrison. The most recent evidence from the MOD statistics suggests that this short-term decline is quickly being reversed with new deployments to the site. For international migration, this year has been *included* in the historical range of data used to calibrate the migration assumptions.

4.9   The historical MYE profile for Richmondshire (see Figure 4 on page 6) includes a substantial UPC adjustment, which is most likely associated with the year-on-year estimation of armed forces personnel (and their dependents) in Richmondshire and/or the associated robustness of the 2001 Census estimate. For this reason, the UPC adjustment has been *ignored* when calibrating the future migration assumptions of the four alternative trend scenarios.

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[8] https://www.ons.gov.uk/populationandmigration/populationprojections/methodologies/

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4.10   In POPGROUP, future migration outcomes can be calculated using migration *rates*, or fixed *counts* of migrants. By using a schedule of rates, the number of in- and out-migrants in each year of the forecast varies, changing in response to the size of the population to which the rates are applied. When using counts, the level of migration in each year of the forecast period is fixed and does not vary with the changing population size within Richmondshire and within those areas from which Richmondshire has historically received migrants.

4.11   With regards to *internal* migration, the two alternative approaches outlined above have been adopted in the scenarios presented here, providing a range of outcomes for consideration. For *international* migration, fixed counts have been applied in each of the alternative trend scenarios. The four alternative trend scenarios for Richmondshire are described in Table 9.

Table 9: Alternative trend scenario definition

Scenario Name	Description
PG-Short-Term-X	Migration assumptions derived from the last six years of historical data (2009/10–2014/15), excluding the 2013/14 year for internal migration. Internal migration projections derived using *rates*. International migration projections derived using *counts*. The UPC adjustment has been excluded.
PG-Short-Term-X-Fixed	Migration assumptions derived from the last six years of historical data (2009/10–2014/15), excluding the 2013/14 year for internal migration. Internal and international migration projections derived using *counts.* The UPC adjustment has been excluded.
PG-Long-Term-X	Migration assumptions derived from the last 14 years of historical data (2001/02–2014/15), excluding the 2013/14 year for internal migration. Internal migration projections derived using *rates.* International migration projections derived using *counts*. The UPC adjustment has been excluded.
PG-Long-Term-X-Fixed	Migration assumptions derived from the last 14 years of historical data (2001/02–2014/15), excluding the 2013/14 year for internal migration. Internal and international migration projections derived using *counts.* The UPC adjustment has been excluded.

Note: 'PG' refers to POPGROUP, the demographic forecasting software used to develop the scenario forecasts; 'X' refers to the exclusion of the UPC adjustment from the historical data; 'fixed' refers to the approach taken to calculating future internal migration assumptions.

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4.12   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 Richmondshire.

Scenario Results: Richmondshire District

4.13   Scenario results are displayed for the 2014–2035 plan period (Figure 23 and Table 10). The plan period includes one year of historical data (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.

4.14   Under the **SNPP-2014** scenario, Richmondshire's population is projected to decrease by 2.3% between 2014 and 2035. This population decline is reflective of the historical population statistics that have been used by ONS to produce this trend-based forecast; the 2012/13 and 2013/14 MYE components of change (see Figure 21 on page 24) suggest substantially lower levels of population growth when compared to the pre-2012 MYEs. Under this benchmark scenario, net migration is negative, at a rate of -36 per year. The earlier **SNPP-2012** scenario projects a *higher* level of population growth than the **SNPP-2014**, as it is not influenced by the lower levels of net internal migration recorded in the post-2012MYEs.

4.15   The **Natural Change** scenario (in which migration is set as zero in each year of the forecast period i.e. from 2015) highlights the key role of migration in driving population growth in Richmondshire. In the absence of migration, the ageing population results in a small population decline (-0.9% 2014–2035), although not as substantial as under the **SNPP-2014** scenario, in which the impact of the ageing population is compounded by a higher level of net out-migration.

4.16   Under the alternative trend scenarios (**PG-Long-Term-X** and **PG-Short-Term-X**), in which migration *rates* are used to determine future levels of internal migration, average annual net migration is projected to be positive, resulting in population growth between 2014 and 2035. The differences between these two scenarios are a reflection of the historical time periods used to calibrate the future migration assumptions. The **PG-Long-Term-X** is influenced by the higher levels of net migration between 2001/02 and 2005/06, resulting in an average annual net migration of 309 per year 2014–2035 and population growth of 13.7%. Under the **PG-Short- Term-X** scenario, population growth is lower, at 8.1% between 2014 and 2035, a result of the

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reduced level of net in-migration (204 per year). These scenarios result in an average annual dwelling requirement of between 94 and 144 dwellings per year, substantially higher than under the SNPP-2014, which produces a dwelling requirement of 8 per year.
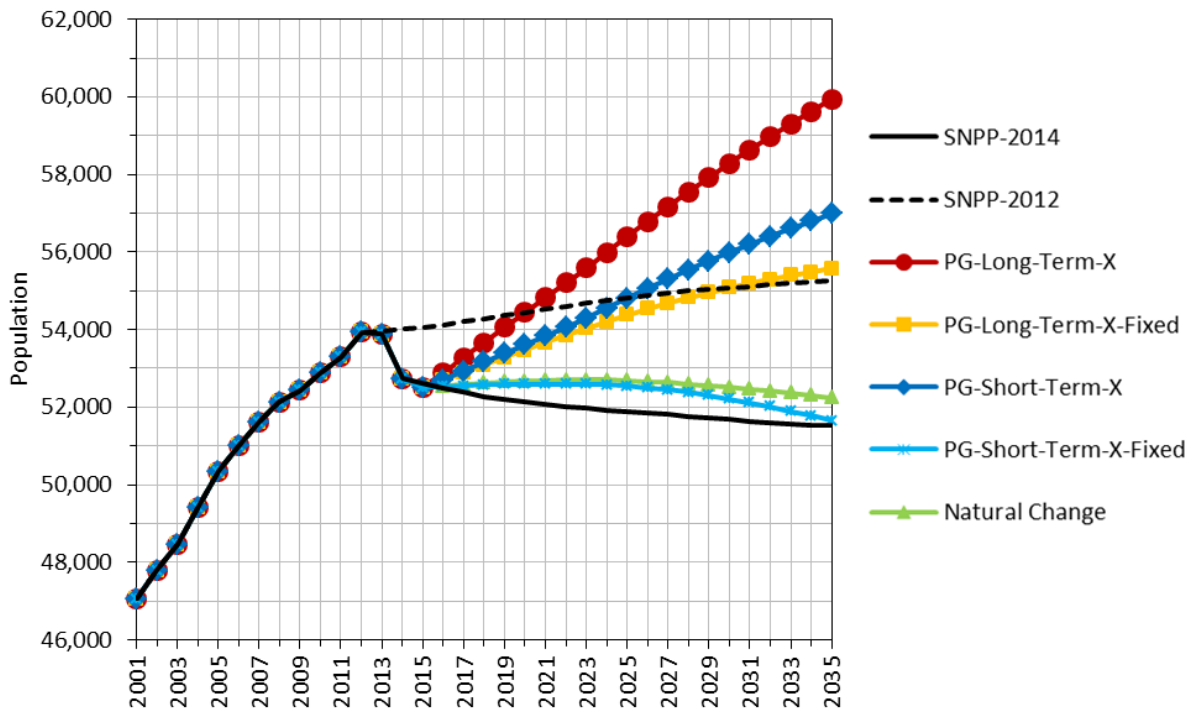
Figure 23: Richmondshire demographic scenario outcomes: population growth 2001–2035

Table 10: Richmondshire demographic scenario outcomes 2014–2035

Scenario	Change 2014–2035				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-Long-Term-X	7,214	13.7%	2,674	12.5%	309	144
PG-Short-Term-X	4,264	8.1%	1,755	8.2%	204	94
PG-Long-Term-X-Fixed	2,837	5.4%	1,161	5.4%	127	62
SNPP-2012	1,246	2.3%	1,354	6.3%	62	73
Natural Change	-488	-0.9%	1,470	6.9%	-12	79
PG-Short-Term-X-Fixed	-1,085	-2.1%	-191	-0.9%	-29	-10
SNPP-2014	-1,211	-2.3%	151	0.7%	-36	8

Note that household growth has been calculated using the 2014-based headship rates and dwelling growth estimated using a fixed 11.4% vacancy rate.

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4.17   The use of migration rates in the 'non-fixed' scenarios enables the number of internal migrants in each year of the forecast to vary depending on the size of the population to which they are applied. In the case of internal *in*-migration, the rates are applied to an external 'reference population', which is defined using the areas that have historically contributed migrants to Richmondshire (see Appendix B for further detail). In the case of internal *out*-migration, the rates are applied to Richmondshire's resident population.

4.18   The 'fixed' scenario variants (**PG-Long-Term-X** and **PG-Short-Term-X**), in which *counts* of internal (and international) migration are applied in each of the forecast period, produce lower growth outcomes than the variants based upon migration *rate* assumptions. These differences are illustrated in Figure 24, which presents the components of change for the four **PG-X** scenarios.
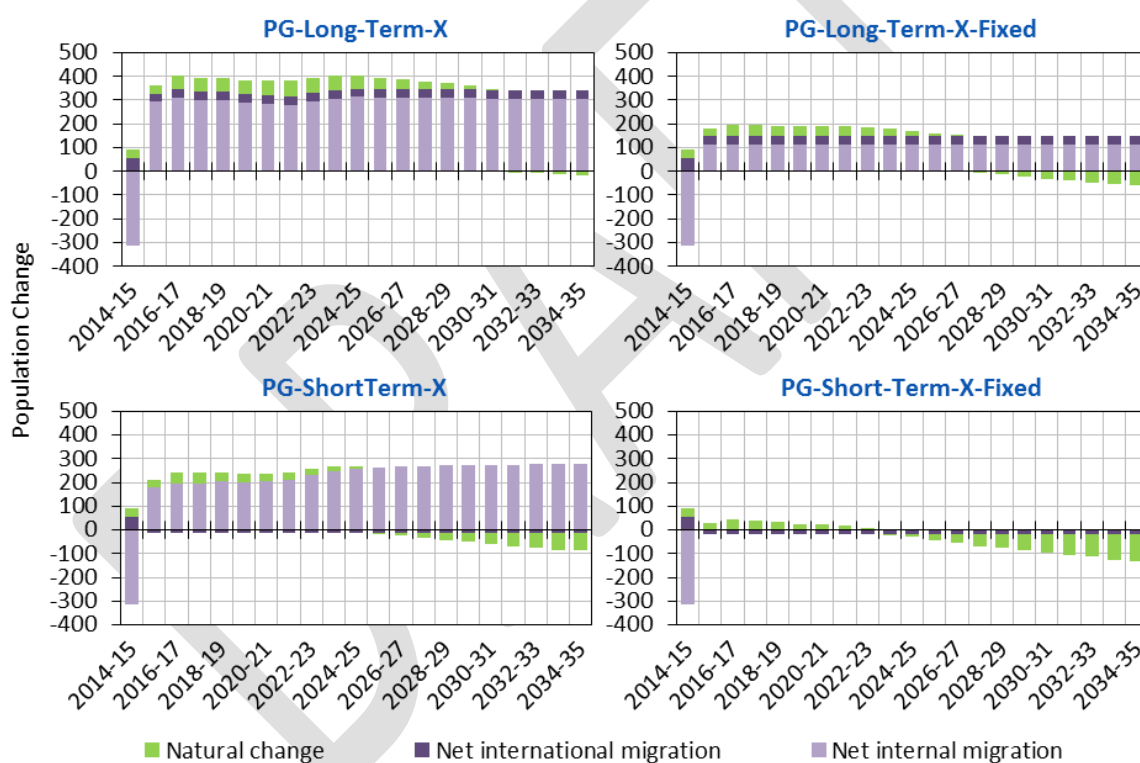
Figure 24: Richmondshire demographic scenario outcomes: population growth 2001–2035

4.19   The **PG-Long-Term-X-Fixed** scenario results in 5.4% growth in the population (2014–2035), compared to 13.7% in the comparable scenario based upon migration rate assumptions (see Table 10). The **PG-Short-Term-X-Fixed** scenario results in population *decline* over the forecast period, at -2.1%, similar to that seen under the **SNPP-2014** scenario. With the historical net internal migration over the short-term period (2009/2010–2014/15 *excluding* 2013/14) averaging

-3 per year, future net internal migration is negligible, with natural change being the dominant driver of population decline.

Headship Rate Sensitivity

4.20   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).

4.21   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 11).

Table 11: Dwelling growth outcomes using variant headship rates

Scenario	Average Annual Dwelling Growth 2014–2035		
	HH-14	**HH-12**	**HH-08**
PG-Long-Term-X	144	142	170
PG-Short-Term-X	94	94	118
PG-Long-Term-X-Fixed	62	62	86
SNPP-2012	73	73	91
Natural Change	79	79	87
PG-Short-Term-X-Fixed	-10	-9	10
SNPP-2014	8	9	25

4.22   There is very little 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 result in *higher* dwelling growth outcomes, a reflection of the assumed faster rate of household formation and the more rapid decline in average household size in the 2008-based DCLG model.

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Age Profile

4.23   The changing age structure of Richmondshire's population is of key importance when considering future housing needs and changes to the labour force. The large birth cohorts of the 1940s, 1950s and 1960s are set to have a substantial effect upon local population profiles, resulting in an 'ageing' of the population. The term 'ageing population' generally refers to an increase over time in the share of the population in the older age-groups.

4.24   Richmondshire's projected age profile change under the **SNPP-2014** scenario is presented for the 2014–2035 plan period in Figure 25. The red bars indicate where the population in 2035 is *lower* than in the 2014 base year. The blue bars indicate where the end population is *higher* than the base year. The large 'spike' in the male population between ages 20 and 30 is associated with Richmondshire's armed forces.
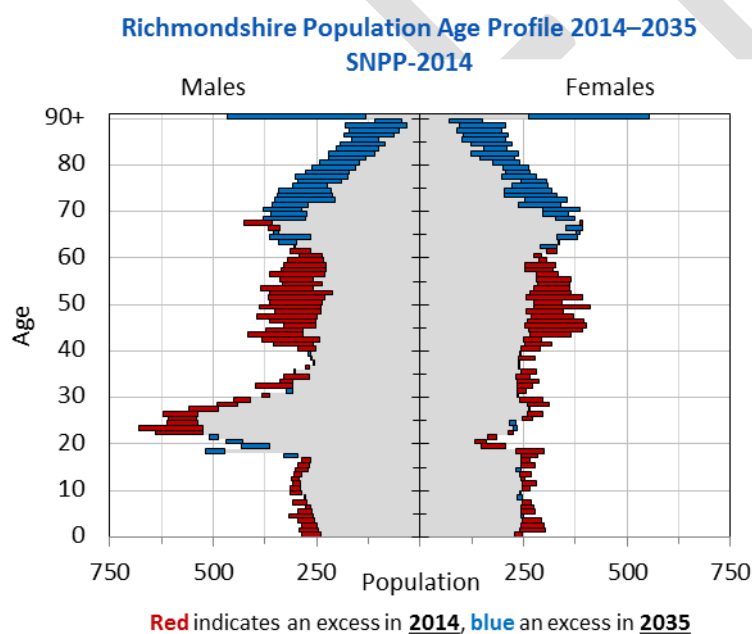
Figure 25: Richmondshire population age profile, 2014–2035 (Source: ONS, POPGROUP)

4.25   By 2035, 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. The proportion of the population aged 65+ is projected to increase from 19% in 2014, to 29% by 2035. This ageing of the population is reflected in the Old Age Dependency (OAD) ratio, which is projected to increase from 30 in 2014 to 52 by 2035. This means that the 65+ population will be equivalent to 52% of those aged 16–64 by 2032, compared to 30% at the start of the plan period.

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Locally, in areas not influenced by the military population, it is likely that the impact of population ageing will have a more pronounced effect, as the older population will be dependent on a much smaller younger population.

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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 the latest economic forecast for Richmondshire from the REM.

Economic Assumptions

Economic Activity Rates

5.4   In the POPGROUP modelling, 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 Richmondshire increased in all but the youngest age groups, and most notably in the older age groups (Figure 26). The increase in the economic activity rates has been more pronounced for females than for males.

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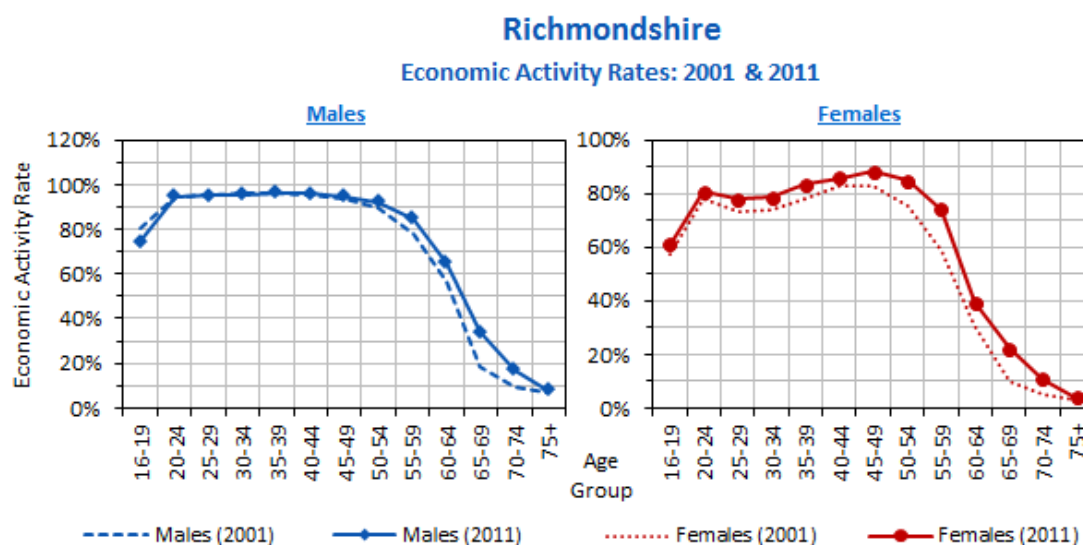
Figure 26: 2001 and 2011 Census economic activity rates for Richmondshire (source: ONS)

5.5   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 Richmondshire (and indeed 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 economic participation rates in the older age groups.

5.6   The Office for Budget Responsibility (OBR) has undertaken analysis of labour market trends in its 2015 Fiscal Sustainability Report[9]. 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.

5.7   In the scenario analysis presented here, the 2011 Census economic activity rates for Richmondshire for ages 60–75+ have been adjusted in line with the OBR forecasts, to account for increased rates of participation in the older age groups. Economic activity rates for the 16–59 age-range remain fixed at their 2011 Census values. The resulting age-specific economic activity rates applied to the Richmondshire scenarios are illustrated in Figure 27 and in the Appendix to this document.

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[9] _Document can be found on the Office for Budget Responsibility website_

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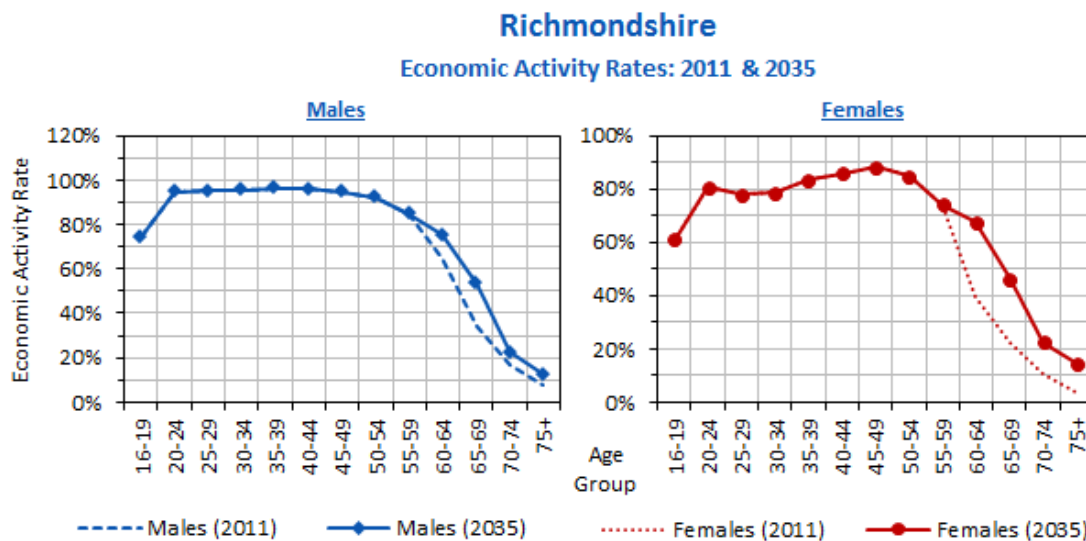
Figure 27: 2011 and 2035 OBR economic activity rates for Richmondshire (Source: ONS & OBR)

Unemployment Rate

5.8   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 Richmondshire 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 and is fixed thereafter (at the 2015 value of 2.2%).

Commuting Ratio

5.9   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).

5.10   A fixed commuting ratio of 0.99 has been applied in scenarios presented here. This ratio is derived from the 2011 Census Travel to Work and indicates a small net *in*-commute to Richmondshire. This contrasts to 2001, when Richmondshire had a commuting ratio of 1.11, indicating a net *out*-commute (see Table 5 on page 13). The commuting statistics include those military personnel who commute to Richmondshire for work.

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Demographic Scenarios & Labour Force Change

5.11   For each of the Richmondshire 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 12).

Table 12: Labour Force and jobs-growth outcomes 2014–2035

Scenario	Labour Force (16–75+)				Average Annual Jobs Growth
	2014	2035	Change	% Change	
PG-Long-Term-X	29,975	32,315	2,340	7.8%	125
PG-Short-Term-X	29,975	30,728	753	2.5%	50
PG-Long-Term-X-Fixed	29,975	29,758	-217	-0.7%	4
SNPP-2012	30,953	30,453	-500	-1.6%	-9
PG-Short-Term-X-Fixed	29,975	27,407	-2,568	-8.6%	-107
SNPP-2014	29,975	27,757	-2,218	-7.4%	-90

5.12   The application of the economic assumptions to the **SNPP-2014** scenario results in a reduction in the size of the labour force, by -2,218 between 2014 and 2035. This results in a reduction in the number of jobs that can be supported in Richmondshire. These changes illustrate the impact of the ageing population, with the larger birth cohorts of the 1940s, 1950s and 1960s moving out of the younger labour force ages and into retirement.

5.13   The **PG-Long-Term-X** scenario has the highest growth assumptions for migration and results in the largest labour force change (+2,340), supporting an estimated annual employment growth of 125 jobs per year. The **PG-Short-Term-X-Fixed** scenario has the lowest growth assumptions of the alternative trend scenarios, resulting in a reduction in the size of the labour force and the number of jobs that can be supported in Richmondshire (-107 per year).

REM Economic Forecast

5.14   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

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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.

5.15   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 (i.e. 2014-based SNPP) 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.

5.16   An employment growth forecast for Richmondshire has been supplied from the September 2016 REM, providing a trajectory of Full Time Equivalent (FTE) employment (Figure 28). This latest version of the REM is based on the Experian September 2016 forecast.
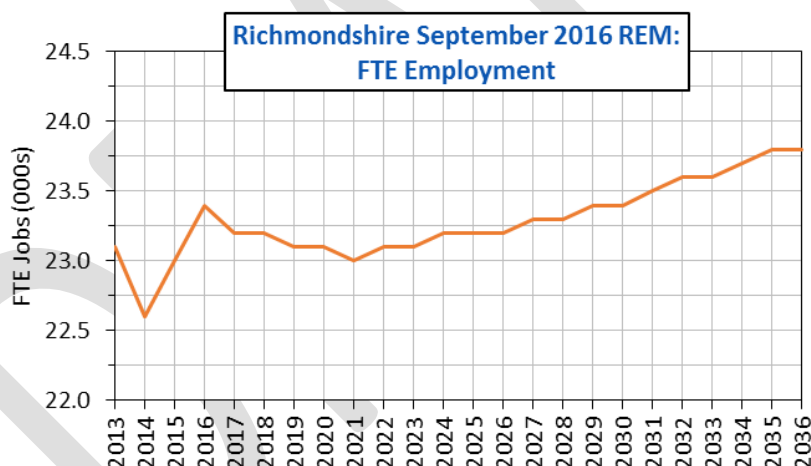
Figure 28: Richmondshire FTE growth forecast (Source: REM, 2014, 2016)

5.17   Between 2014 and 2035 (the Richmondshire plan period), FTE employment is forecast to increase by 1,200, an average of 57 per year. When compared to the level of jobs growth implied by the Richmondshire demographic scenarios (as presented in Section 4), the REM forecast implies a *higher* level of jobs growth than all but the **PG-Long-Term-X** scenario (Figure 29).

5.18   The level of jobs growth implied by the REM forecast is slightly higher than that implied by the **PG-Short-Term-X** scenario (at 50 per year), but is considerably higher than that implied by the two most recent ONS SNPPs, particularly the **SNPP-2014**. With the application of the defined

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economic activity rate, commuting and unemployment rate assumptions (see paragraphs 5.4 to 5.10) jobs growth is *negative* over the plan period under the **SNPP-2014** scenario, at a reduction of -90 per year.
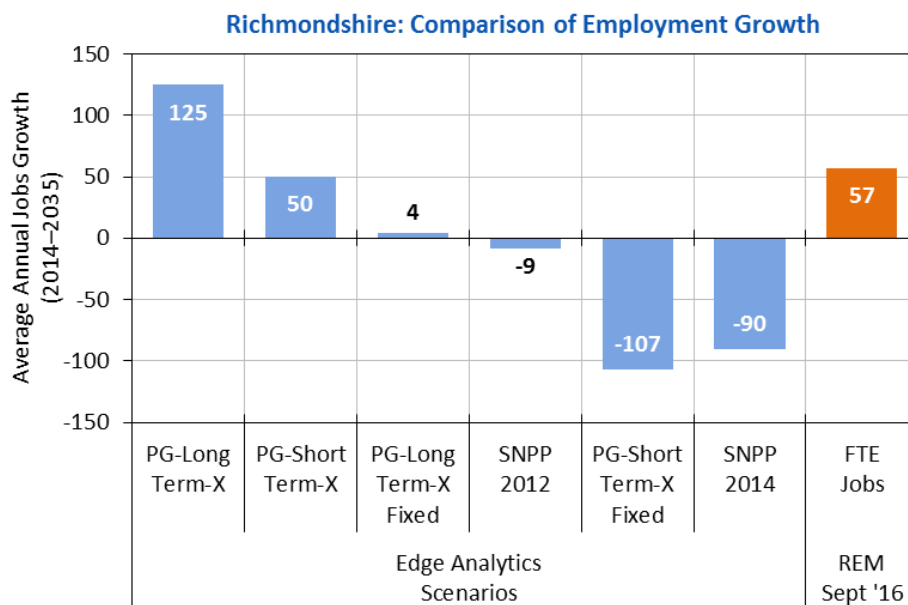
Figure 29: Comparison of average annual jobs growth (2014–2035) from the September 2016 REM employment forecast (orange) and the six demographic scenarios (blue)

5.19   The September 2016 REM is underpinned by the 2014-based SNPP (i.e. the same population as in the **SNPP-2014** scenario), but uses different assumptions to link population growth to employment growth than those used by Edge Analytics. With no changes to migration rates or the underlying population, the REM forecast suggests that a higher level of employment growth can be achieved *without* additional migration, over and above what is implied by the 2014-based SNPP. To achieve a comparable level of jobs growth under the Edge Analytics **SNPP-2014** scenario, one or a combination of the following would need to apply:

- Higher levels of net in-migration;
- Higher rates of economic participation (economic activity rates);
- A reduction in unemployment rates (although these are already low for Richmondshire);
- A larger net in-commute (i.e. a reduction in the commuting ratio from its current assumed value of 0.99).

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6 Sub-District Scenario Results

Summary

6.1   The following series of charts present population growth for the 2001–2035 period for the two sub-district areas of Richmondshire: the area that falls within the YDNP, and the area that falls outside the YDNP. The associated tables present population and household change for the 2014–2035 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 using the 2008-based household assumptions provided in Section 7 (the 2012-based assumptions have been ignored due to their similarity with the 2014-based assumptions; see Table 11 on page 33).

6.3   Note that there are slight inconsistencies between the sum of the two sub-district areas and the district-level totals presented in Section 4. This is due to the differing age structures of the sub-district areas and the effect of using area-specific household and dwelling growth assumptions. The household and dwelling outcomes are generally slightly higher at district level than at the sub-district level.

6.4   In the area of Richmondshire that falls *inside* the YDNP (Figure 30 and Table 13), the population declines under all scenarios. This is a result of the ageing population (resulting in an excess of deaths over births), in combination with net out-migration in most years of the forecast period. In the area of Richmondshire that falls *outside* the YDNP (Figure 31 and Table 14), population growth is positive under all scenarios, reflective of the relatively youthful age structure of the population in this area. Under the benchmark **SNPP-2014**, the population is maintained at its 2014 level, resulting in an annual average dwelling requirement of 25 per year.

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Richmondshire

Inside Yorkshire Dales National Park
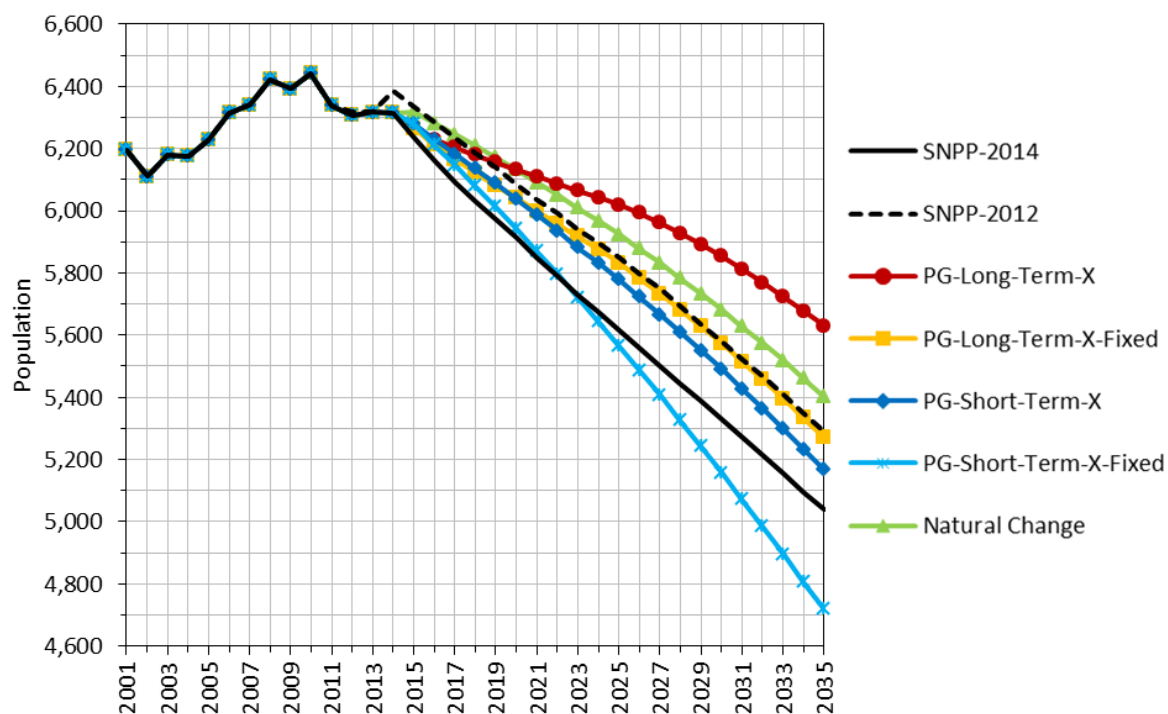
Figure 30: Yorkshire Dales National Park scenarios: population growth 2001–2035

Table 13: Yorkshire Dales National Park scenarios 2014–2035

Scenario	Change 2014–2035				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-Long-Term-X	-685	-10.9%	-46	-1.5%	3	-3
Natural Change	-912	-14.4%	-252	-8.1%	-6	-17
PG-Long-Term-X-Fixed	-1,043	-16.5%	-215	-6.9%	-13	-15
SNPP-2012	-1,095	-17.2%	-163	-5.2%	-9	-11
PG-Short-Term-X	-1,147	-18.2%	-259	-8.3%	-15	-18
SNPP-2014	-1,276	-20.2%	-301	-9.6%	-24	-21
PG-Short-Term-X-Fixed	-1,596	-25.3%	-473	-15.1%	-36	-32

Note that household growth has been calculated using the 2014-based headship rates and dwelling growth estimated using a fixed 30.7% vacancy rate.

Richmondshire

Outside Yorkshire Dales National Park
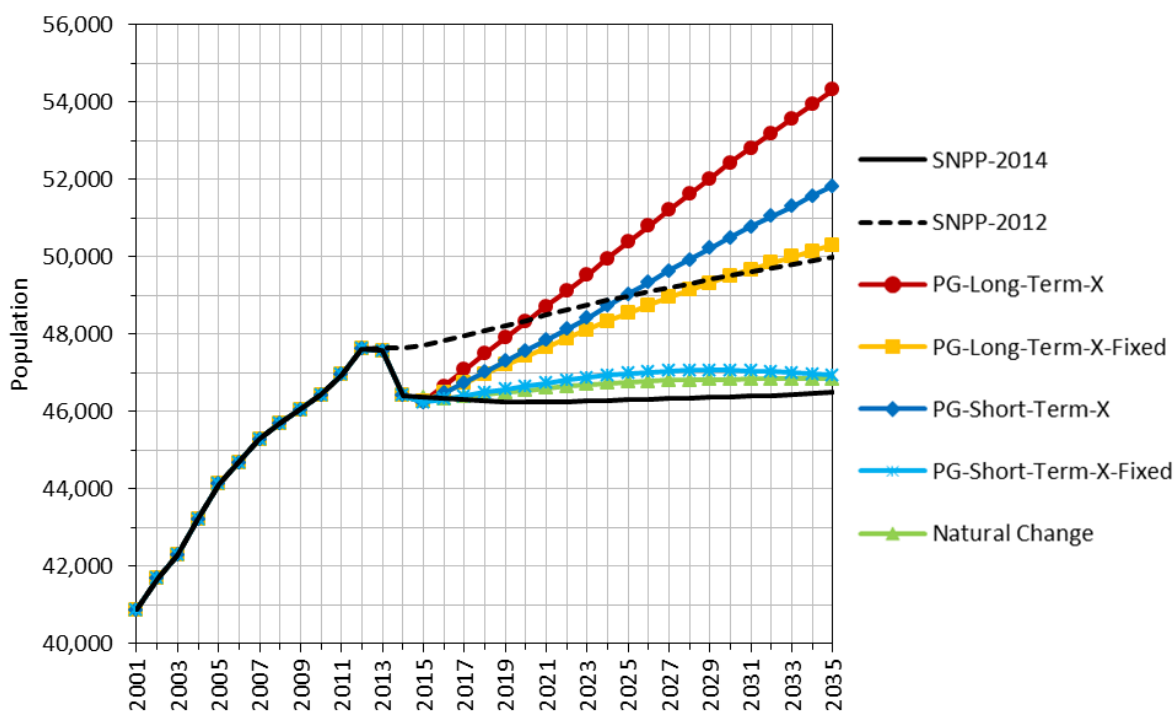
Figure 31: Outside Yorkshire Dales National Park scenarios: population growth 2001–2035

Table 14: Outside Yorkshire Dales National Park scenarios 2014–2035

Scenario	Change 2014–2035				Average per year	
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings
PG-Long-Term-X	7,902	17.0%	2,793	15.2%	292	143
PG-Short-Term-X	5,415	11.7%	2,069	11.3%	205	106
PG-Long-Term-X-Fixed	3,886	8.4%	1,422	7.7%	126	73
SNPP-2012	2,357	4.9%	1,611	8.7%	73	82
PG-Short-Term-X-Fixed	517	1.1%	304	1.7%	-7	16
Natural Change	423	0.9%	1,777	9.7%	-21	91
SNPP-2014	94	0.2%	482	2.6%	-26	25

Note that household growth has been calculated using the 2014-based headship rates and dwelling growth estimated using a fixed 6.9% vacancy rate.

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7 Summary

Approach

7.1   To inform the Richmondshire Local Plan review, Edge Analytics has produced a range of demographic scenarios using POPGROUP technology. Scenarios have been produced for the 2014–2035 plan period for Richmondshire as a whole and for the sub-district areas that fall inside and outside the YDNP.

7.2   The starting point of the scenario analysis is the 2014-based SNPP and the 2014-based DCLG household projection model for Richmondshire. Four alternative trend scenarios have also been developed, using variant migration assumptions, for comparison with the SNPP benchmark. Household and dwelling growth have been estimated using assumptions from the 2014-based DCLG household projection model for Richmondshire. 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.

7.3   The analysis considers the effect of changing age structure on Richmondshire's labour force, linking the demographic scenarios to an estimated jobs growth requirement using assumptions on economic activity rates, unemployment and commuting. These outcomes are compared to the latest September 2016 REM for Richmondshire.

Growth Outcomes

7.4   A summary of Richmondshire's dwelling growth forecasts is provided in Figure 32, illustrating the outcomes 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.

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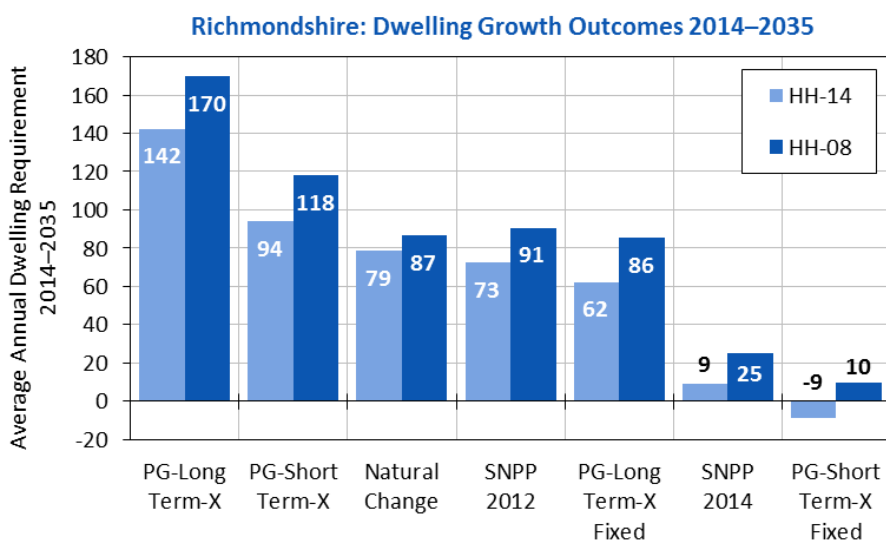
Figure 32: Dwelling growth outcomes for Richmondshire 2014–2035

7.5   For the two sub-district areas, results are summarised in table form (Table 15), with output for each scenario using the variant 2008-based and 2014-based household assumptions (again the 2012-based results have been excluded due to their similarity with the 2014-based outcomes).

Table 15: Sub-district scenarios: estimated dwelling growth 2014–2035

Richmondshire: Inside YDNP

Scenario	Average Annual Dwelling Growth 2014–2035	
	HH-14	HH-08
PG-Long-Term-X	-3	-4
PG-Short-Term-X	-18	-19
PG-Long-Term-X-Fixed	-15	-15
SNPP-2012	-11	-13
PG-Short-Term-X-Fixed	-32	-33
Natural Change	-17	-18
SNPP-2014	-21	-21

Richmondshire: Outside YDNP

Scenario	Average Annual Dwelling Growth 2014–2035	
	HH-14	HH-08
PG-Long-Term-X	143	167
PG-Short-Term-X	106	128
PG-Long-Term-X-Fixed	73	95
SNPP-2012	82	100
PG-Short-Term-X-Fixed	16	35
Natural Change	91	97
SNPP-2014	25	41

7.6   Note that the sub-district dwelling growth figures (presented in Table 15) 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.

Concluding Comments

7.7   The latest official population projection, the **SNPP-2014**, projects population *decline* for Richmondshire. The ONS 2014-based SNPP (which is replicated in the **SNPP-2014** scenario) is a trend-based scenario, driven by the MYEs prior to 2014. The substantial net internal migration outflow in 2013/14, associated with the relocation of military personnel at Catterick Garrison, is unlikely to be continued in the future. However, the **SNPP-2014** appears to reflect this recent net outflow, with net internal migration remaining negative throughout much of its forecast period.

7.8   For this reason, the alternative trend (**PG-X**) scenarios have been developed, using either a 6-year or 14-year historical period for the calibration of future migration assumptions. Importantly, the 2013/14 internal migration estimates have been *excluded* from this calibration process.

7.9   Two scenarios have been run in which internal migration assumptions are applied as *rates* (**PG-Short-Term-X** and **PG-Long-Term-X**), and two in which internal migration *counts* have been applied (**PG-Short-Term-X-Fixed** and **PG-Long-Term-X-Fixed**). This range of outcomes has been necessary due to the challenge of robustly forecasting Richmondshire's future growth trends, given the historical influence of the UPC adjustments and the more recent fluctuations in the size of the military population and its dependants.

7.10   Although the population profile of Richmondshire is projected to age over time, the presence of the military population (and their dependents) at Catterick means that, for the area of Richmondshire that falls outside the YDNP, the impact of this ageing is reduced. This has an impact on the size and structure of the resident labour force, which, under the two alternative trend scenarios, can support a level of jobs growth.

7.11   The latest REM forecast for Richmondshire projects a similar level of employment growth as the **PG-Short-Term-X** scenario, at 50 and 57 jobs per year respectively. However, the REM forecast is underpinned by the 2014-based SNPP. With the economic activity, commuting and unemployment rate assumptions applied to the Edge Analytics **SNPP-2014** forecast, the number

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of jobs that can be supported in Richmondshire reduces over time (by an average of -90 per year). This indicates that the REM forecast assumes substantially higher rates of economic activity, or alternative unemployment and commuting ratio assumptions.

7.12   Catterick Garrison includes a military workforce of approximately 7,650 personnel. Not all personnel will live at the site but there are an estimated 4,550 living in communal establishments, plus approximately 5,000 personnel and their families living in SFA premises.

7.13   The military population associated with Catterick Garrison is a major contributor to Richmondshire's natural change, with a substantial annual births total. This has the effect of maintaining the relatively youthful age profile of the district. The sub-district growth profile presented here illustrates that a considerable amount of population growth has been focussed around those wards where the Armed Forces population is concentrated, emphasising that the military population is likely to be the key driver of natural change in Richmondshire. Births associated with military personnel make a significant contribution to the annual growth profile of Richmondshire, although it is likely that these children do not age far into the population before they are 'replaced' through redeployment to and from the district.

7.14   With the challenge of robustly identifying the (changing) size of the military population it is difficult to isolate its impact upon the historical internal migration statistics. Even with the UPC component removed, it is likely that changes relating to the military population and dependents have made a significant contribution to Richmondshire's migration growth over the historical period. Any future changes associated with the military population are more likely to be subject to national defence policies rather than the usual demographic factors.

7.15   The scenarios do not incorporate any specific intelligence on planned growth to the military population at Catterick Garrison, and the size of the communal establishment population has been kept static for the military population in each scenario. The **PG-X** scenarios incorporate assumptions relating to a continuation of growth trends over the most recent (6-year and 14- year) periods, with internal migration projections calculated using either *rates* or *counts*.

7.16   With the 2013/14 year of redeployment and the historical UPC component *excluded* from the historical time period, the higher levels of population growth associated with the **PG-X** scenarios that use migration *rate* assumptions imply a continuation of population (and dwelling) growth associated with the military population at Catterick Garrison. In the 'fixed' **PG-X** scenarios, growth outcomes are lower, with a level of net migration that more closely aligns with the most

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recent historical evidence. In these scenarios, there is no projected variation in migration to account for the effect of changing population profiles both within Richmondshire and within those areas that have historically contributed migrants to the district.

7.17   The two **PG-Long-Term-X** scenarios assume a continuation of higher growth trends. Whilst the two **PG-Short-Term-X** scenarios also assume a continuation of the historical trends, these are influenced by the lower levels of growth seen during the latter half of the historical period. The range of outcomes derived from the **PG-Short-Term-X** scenarios may, therefore, better reflect a military 'steady-state' position.

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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 33) 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 34) 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/.
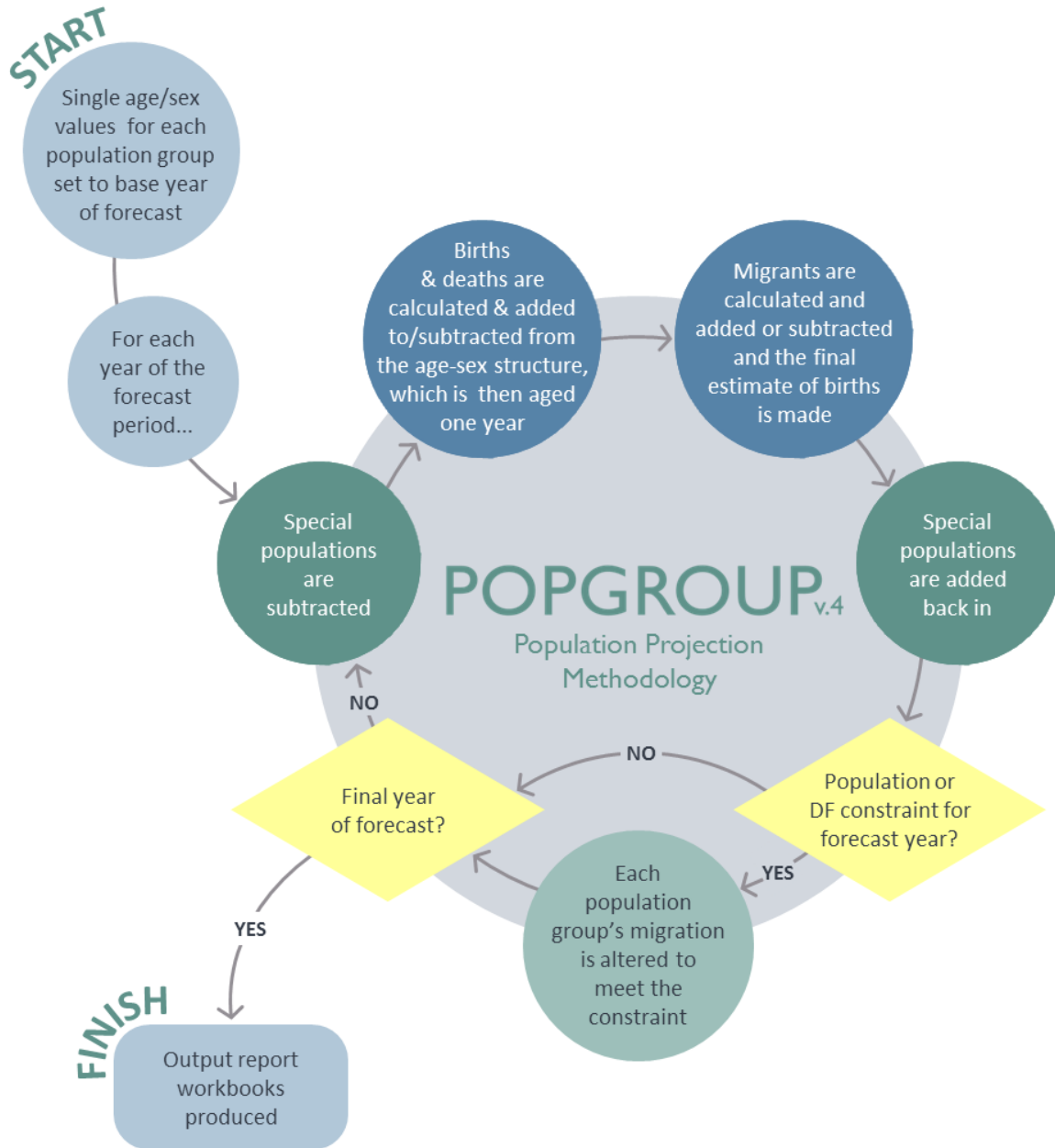
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Figure 33: POPGROUP population projection methodology
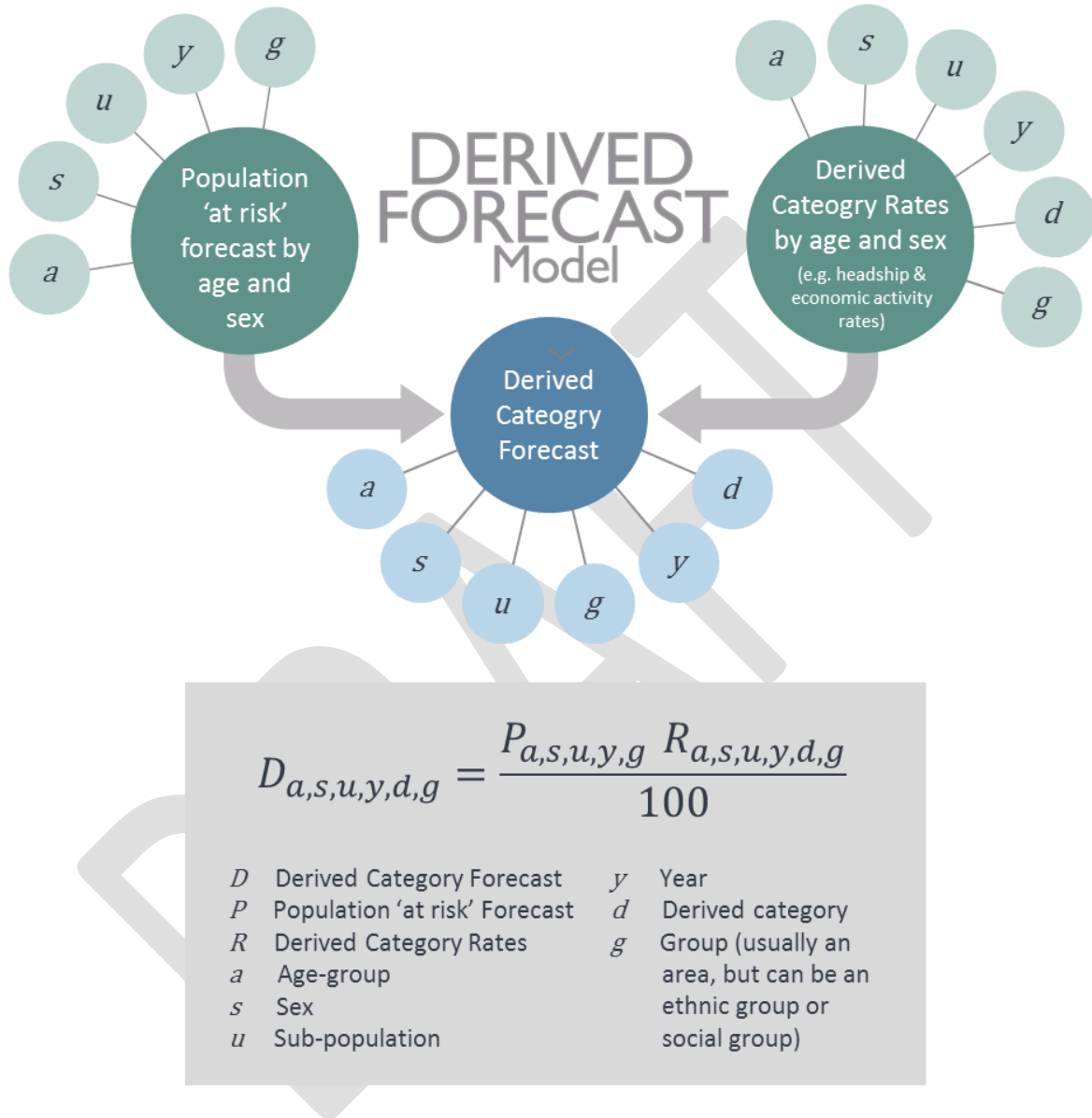
Figure 34: Derived Forecast (DF) methodology

Appendix B

Data Inputs & Assumptions

Introduction

B.1 Edge Analytics has developed a suite of demographic scenarios for Richmondshire 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 Richmondshire and its two sub-district areas:

- **SNPP-2014**
- **SNPP-2012**
- **PG-Short-Term-X**
- **PG-Long-Term-X**
- **PG-Short-Term-X-Fixed**
- **PG-Long-Term-X-Fixed**
- **Natural Change**.

B.3 In the following sections, a narrative on the data inputs and assumptions underpinning the scenarios is presented.

Model Configuration

B.4 In developing the demographic forecasts, scenarios have been configured for Richmondshire district in aggregate. For the two sub-district areas (inside/outside the YDNP), forecasts have been similarly configured using a combination of Census Output Area (OA) data to derive

population and components-of-change statistics. Sub-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.5   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. Richmondshire as a single area).

Population, Births & Deaths

Population

B.6   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.7   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.8   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.9   In the other scenarios, the historical MYEs are used up to 2015.

Births & Fertility

B.10   In each scenario, historical mid-year to mid-year counts of births by sex have been sourced from the ONS MYEs.

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B.11   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.12   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.13   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.14   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.15   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.16   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.17   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.18   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.

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B.19   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.20   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.21   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.22   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.23   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.24   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 estimates are based on the area-specific historical migration data (but excluding the 2013/14 figure). In the **PG Short-Term-X** scenarios, a *six* year internal migration history is used (2009/10 to 2014/15). In the **PG Long-Term-X** scenarios, a 14-year internal migration history is used (2001/02 to 2014/15). In the 'non-fixed' scenarios, the numbers of in- and out-migrants have been derived using a schedule of migration rates. In the 'fixed' variants, an average level (i.e. a fixed count) of in- and out-migration is defined, derived directly from the historical data. In each of the **PG** scenarios, an ASMigR

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schedule of rates is derived from the relevant migration history and is used to distribute future counts by single year of age.

International Migration

B.25   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.26   In all scenarios, future international migrant counts are specified.

B.27   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.28   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.29   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.30   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-X** scenarios, a six year history is used (2009/10 to 2014/15). In the **PG Long-Term-X** scenarios, a 14-year history is used (2001/02 to 2014/15). In each **PG** scenario, an ASMigR schedule of rates is derived from the relevant migration history and is used to distribute future counts by single year of age.

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Households & Dwellings

B.31   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.32   In POPGROUP, a dwelling is defined as a unit of accommodation which can either be occupied by
one household or vacant.

B.33   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.34   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"[10].

B.35   The household headship rates used in the POPGROUP modelling have been taken from the latest
DCLG 2014-based household projection model for Richmondshire, 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.

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[10] 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

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B.36   In POPGROUP, the Stage Two headship rates have been applied by 10-year age group in an 8-fold household type classification (Table 16). 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 16: 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
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.37   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, student halls of residence and certain armed forces accommodation.

B.38   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.

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Vacancy Rate

B.39   The relationship between households and dwellings is modelled using a 'vacancy rate', sourced
        from the 2011 Census[11]. The vacancy rate is calculated using statistics on households (occupied
        household spaces) and dwellings (shared and unshared).

B.40   A vacancy rate of 11.4% for Richmondshire district 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:

- Richmondshire *inside* the YDNP: 30.7%
- Richmondshire *outside* the YDNP: 6.9%

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[11] Census Table KS401EW: Dwellings, household spaces and accommodation type

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Labour Force & Jobs

B.41   The labour force and jobs implications of the demographic scenarios for Richmondshire have been evaluated through the application of three key data items: economic activity rates, an unemployment rate and a commuting ratio.

Economic Activity Rates

B.42   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 35).
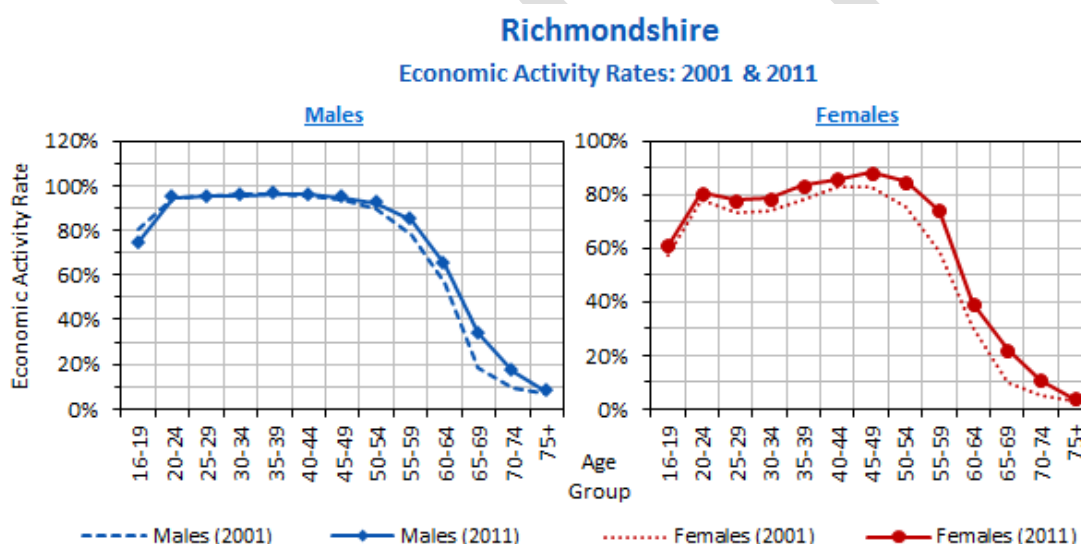
Figure 35: Richmondshire's economic activity rates: 2001 and 2011 Census comparison (source: ONS)

B.43   The Office for Budget Responsibility (OBR) has undertaken analysis of labour market trends in its 2015 Fiscal Sustainability Report[12]. 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 Richmondshire. Adjustments have been made to the older 60–75+ age groups (Table 17 and Figure 36).

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[12] Document can be found on the Office for Budget Responsibility website

Table 17: 2011 Census OBR Economic Activity Rate adjustments

OBR Economic Activity Rate Adjustments Change 2011–2035			
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	57%	65–69	108%
70–74	32%	70–74	112%
75+	53%	75+	295%
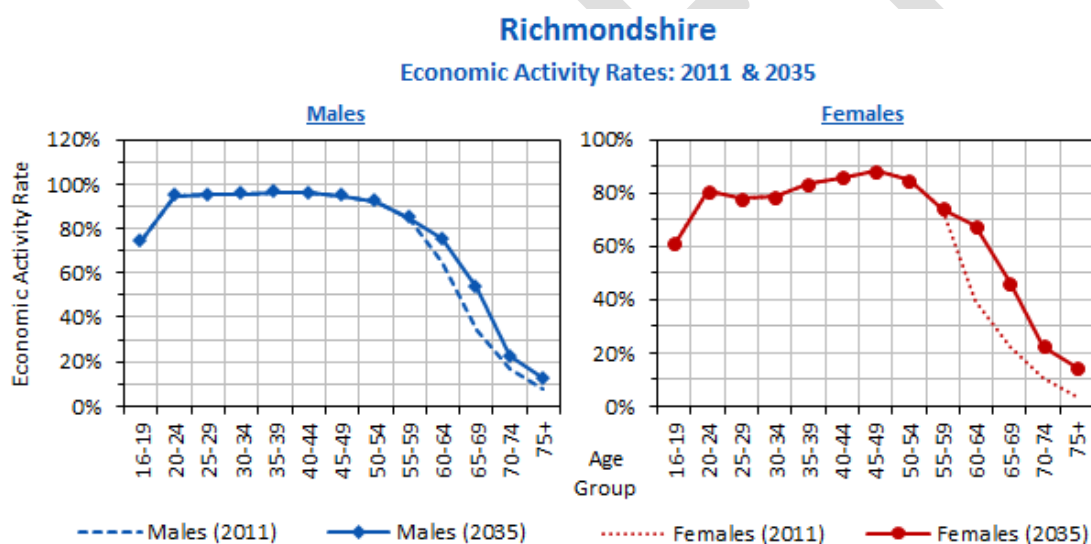
Figure 36: OBR-adjusted economic activity rate profile for Richmondshire

Commuting Ratio

B.44   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.

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B.45 From the 2011 Census 'Travel to Work' statistics, published by ONS in July 2014, a commuting ratio of 0.99 has been derived for Richmondshire. This is compared to the 2001 Census value of 1.11 (indicating a net out-commute) in Table 18.

Table 18: Commuting Ratio Comparison

Richmondshire		2001 Census	2011 Census
Workers	a	24,106	27,795
Employment	b	21,676	28,130
Commuting Ratio	a/b	**1.11**	**0.99**

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.46 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.47 In all scenarios, historical unemployment rates have been defined up to 2015 (Table 19), with the unemployment rate fixed at the 2015 value of 2.2% throughout the forecast period.

Table 19: Historical unemployment rates 2004–2015

Area	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Richmondshire	3.2	3.0	2.9	3.4	3.4	4.4	4.8	5.9	5.3	4.2	3.2	2.2

Source: ONS model-based estimates of unemployment, NOMIS

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Appendix C

Population Profile: Richmondshire

Table 20: Population profile: Richmondshire -**SNPP-2014**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	9,213	9,245	9,037	8,671	8,534	8,281	8,193
16-24	5,823	7,841	6,330	5,942	5,843	5,996	5,945
25-44	13,429	13,458	13,362	12,281	12,061	11,753	11,575
45-64	11,403	13,575	13,773	13,827	12,862	11,680	10,741
65-79	5,323	6,831	7,790	8,416	9,011	9,410	10,049
80+	1,876	2,337	2,437	2,990	3,587	4,563	5,014
Total	**47,067**	**53,287**	**52,729**	**52,128**	**51,897**	**51,682**	**51,518**

Table 21: Population profile: Richmondshire -**SNPP-2012**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	9,213	9,245	9,079	8,897	8,783	8,550	8,394
16-24	5,823	7,841	7,697	7,408	7,310	7,477	7,478
25-44	13,429	13,458	13,397	12,975	13,091	13,008	12,939
45-64	11,403	13,575	13,532	13,462	12,643	11,549	10,820
65-79	5,323	6,831	7,825	8,561	9,168	9,562	10,166
80+	1,876	2,337	2,487	3,139	3,830	4,936	5,467
Total	**47,067**	**53,287**	**54,017**	**54,442**	**54,826**	**55,082**	**55,264**

Table 22: Population profile: Richmondshire - **PG-Long-Term-X**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	9,213	9,245	9,037	9,617	10,223	10,530	10,764
16-24	5,823	7,841	6,330	6,285	6,398	6,926	7,256
25-44	13,429	13,458	13,362	12,748	13,456	13,944	14,628
45-64	11,403	13,575	13,773	14,161	13,296	12,275	11,414
65-79	5,323	6,831	7,790	8,581	9,330	9,911	10,657
80+	1,876	2,337	2,437	3,048	3,692	4,693	5,224
Total	**47,067**	**53,287**	**52,729**	**54,440**	**56,396**	**58,279**	**59,943**

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Table 23: Population profile: Richmondshire - **PG-Long-Term-X-Fixed**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	9,213	9,245	9,037	9,376	9,690	9,688	9,669
16-24	5,823	7,841	6,330	6,093	6,098	6,461	6,624
25-44	13,429	13,458	13,362	12,426	12,739	12,843	13,167
45-64	11,403	13,575	13,773	14,017	13,001	11,794	10,701
65-79	5,323	6,831	7,790	8,525	9,198	9,677	10,308
80+	1,876	2,337	2,437	3,029	3,648	4,611	5,097
Total	**47,067**	**53,287**	**52,729**	**53,465**	**54,374**	**55,073**	**55,566**

Table 24: Population profile: Richmondshire - **PG-Short-Term-X**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	9,213	9,245	9,037	9,422	9,770	9,818	9,857
16-24	5,823	7,841	6,330	6,076	6,120	6,611	6,846
25-44	13,429	13,458	13,362	12,474	12,868	13,122	13,623
45-64	11,403	13,575	13,773	14,046	13,114	11,980	10,996
65-79	5,323	6,831	7,790	8,557	9,264	9,793	10,480
80+	1,876	2,337	2,437	3,035	3,673	4,664	5,190
Total	**47,067**	**53,287**	**52,729**	**53,610**	**54,810**	**55,990**	**56,993**

Table 25: Population profile: Richmondshire - **PG-Short-Term-X-Fixed**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	9,213	9,245	9,037	9,187	9,236	8,953	8,687
16-24	5,823	7,841	6,330	5,894	5,787	6,061	6,089
25-44	13,429	13,458	13,362	12,097	11,997	11,722	11,707
45-64	11,403	13,575	13,773	13,901	12,781	11,392	10,070
65-79	5,323	6,831	7,790	8,500	9,118	9,525	10,065
80+	1,876	2,337	2,437	3,015	3,624	4,562	5,025
Total	**47,067**	**53,287**	**52,729**	**52,595**	**52,542**	**52,216**	**51,644**

Appendix D

Population Profile: Inside Yorkshire Dales National Park

Table 26: Population profile: Inside Yorkshire Dales National Park - **SNPP-2014**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	996	836	770	650	599	521	442
16-24	448	493	394	236	156	144	136
25-44	1,448	1,238	1,232	1,047	920	750	590
45-64	1,959	2,159	2,097	2,043	1,874	1,702	1,582
65-79	1,008	1,220	1,414	1,450	1,476	1,439	1,486
80+	336	393	407	485	592	774	803
Total	**6,195**	**6,339**	**6,314**	**5,911**	**5,617**	**5,330**	**5,038**

Table 27: Population profile: Inside Yorkshire Dales National Park - **SNPP-2012**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	996	836	776	669	630	563	481
16-24	448	493	461	303	217	188	176
25-44	1,448	1,238	1,229	1,096	966	772	565
45-64	1,959	2,159	2,062	1,999	1,856	1,697	1,592
65-79	1,008	1,220	1,421	1,482	1,516	1,479	1,537
80+	336	393	435	536	665	883	937
Total	**6,195**	**6,339**	**6,384**	**6,085**	**5,851**	**5,581**	**5,289**

Table 28: Population profile: Inside Yorkshire Dales National Park - **PG-Long-Term-X**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	996	836	770	702	699	656	594
16-24	448	493	394	242	181	165	157
25-44	1,448	1,238	1,232	1,078	996	853	702
45-64	1,959	2,159	2,097	2,117	1,962	1,799	1,675
65-79	1,008	1,220	1,414	1,492	1,559	1,567	1,635
80+	336	393	407	502	623	814	866
Total	**6,195**	**6,339**	**6,314**	**6,133**	**6,019**	**5,853**	**5,629**

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Table 29: Population profile: Inside Yorkshire Dales National Park - **PG-Long-Term-X-Fixed**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	996	836	770	688	666	604	528
16-24	448	493	394	232	166	153	144
25-44	1,448	1,238	1,232	1,056	952	790	633
45-64	1,959	2,159	2,097	2,090	1,912	1,729	1,589
65-79	1,008	1,220	1,414	1,478	1,524	1,507	1,548
80+	336	393	407	497	610	790	829
Total	**6,195**	**6,339**	**6,314**	**6,040**	**5,831**	**5,574**	**5,271**

Table 30: Population profile: Inside Yorkshire Dales National Park - **PG-Short-Term-X**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	996	836	770	651	608	538	467
16-24	448	493	394	334	239	211	193
25-44	1,448	1,238	1,232	1,019	955	830	701
45-64	1,959	2,159	2,097	2,018	1,788	1,549	1,372
65-79	1,008	1,220	1,414	1,499	1,539	1,504	1,523
80+	336	393	407	516	649	858	911
Total	**6,195**	**6,339**	**6,314**	**6,038**	**5,779**	**5,490**	**5,168**

Table 31: Population profile: Inside Yorkshire Dales National Park - **PG-Short-Term-X-Fixed**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	996	836	770	639	578	490	405
16-24	448	493	394	320	213	186	159
25-44	1,448	1,238	1,232	995	900	746	598
45-64	1,959	2,159	2,097	1,993	1,736	1,470	1,266
65-79	1,008	1,220	1,414	1,484	1,502	1,437	1,423
80+	336	393	407	511	636	830	866
Total	**6,195**	**6,339**	**6,314**	**5,942**	**5,565**	**5,158**	**4,718**

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Appendix E

Population Profile: Outside Yorkshire Dales National Park

Table 32: Population profile: Outside Yorkshire Dales National Park -**SNPP-2014**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	8,217	8,406	8,281	8,022	7,935	7,760	7,752
16-24	5,375	7,351	5,921	5,742	5,713	5,879	5,838
25-44	11,981	12,220	12,130	11,234	11,141	11,003	10,985
45-64	9,444	11,416	11,676	11,784	10,987	9,978	9,160
65-79	4,315	5,611	6,376	6,966	7,535	7,971	8,563
80+	1,540	1,944	2,030	2,505	2,995	3,788	4,211
Total	**40,872**	**46,948**	**46,415**	**46,253**	**46,307**	**46,379**	**46,509**

Table 33: Population profile: Outside Yorkshire Dales National Park -**SNPP-2012**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	8,217	8,406	8,303	8,228	8,153	7,988	7,913
16-24	5,375	7,351	7,236	7,105	7,103	7,302	7,317
25-44	11,981	12,220	12,168	11,878	12,125	12,236	12,374
45-64	9,444	11,416	11,469	11,463	10,787	9,852	9,228
65-79	4,315	5,611	6,405	7,079	7,652	8,082	8,629
80+	1,540	1,944	2,052	2,604	3,165	4,054	4,530
Total	**40,872**	**46,948**	**47,634**	**48,357**	**48,984**	**49,515**	**49,990**

Table 34: Population profile: Outside Yorkshire Dales National Park - **PG-Long-Term-X**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	8,217	8,406	8,281	8,915	9,524	9,874	10,170
16-24	5,375	7,351	5,921	6,048	6,219	6,762	7,103
25-44	11,981	12,220	12,130	11,670	12,460	13,091	13,926
45-64	9,444	11,416	11,676	12,044	11,334	10,477	9,739
65-79	4,315	5,611	6,376	7,088	7,772	8,344	9,022
80+	1,540	1,944	2,030	2,546	3,069	3,879	4,358
Total	**40,872**	**46,948**	**46,415**	**48,312**	**50,378**	**52,426**	**54,317**

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Table 35: Population profile: Outside Yorkshire Dales National Park - **PG-Long-Term-X-Fixed**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	8,217	8,406	8,281	8,689	9,024	9,084	9,141
16-24	5,375	7,351	5,921	5,866	5,935	6,313	6,486
25-44	11,981	12,220	12,130	11,369	11,786	12,054	12,534
45-64	9,444	11,416	11,676	11,928	11,089	10,065	9,112
65-79	4,315	5,611	6,376	7,047	7,674	8,170	8,759
80+	1,540	1,944	2,030	2,532	3,038	3,820	4,268
Total	**40,872**	**46,948**	**46,415**	**47,431**	**48,546**	**49,505**	**50,301**

Table 36: Population profile: Outside Yorkshire Dales National Park - **PG-Short-Term-X**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	8,217	8,406	8,281	8,770	9,162	9,280	9,390
16-24	5,375	7,351	5,921	5,742	5,881	6,403	6,658
25-44	11,981	12,220	12,130	11,455	11,913	12,292	12,922
45-64	9,444	11,416	11,676	12,028	11,326	10,431	9,624
65-79	4,315	5,611	6,376	7,058	7,725	8,289	8,957
80+	1,540	1,944	2,030	2,519	3,024	3,806	4,279
Total	**40,872**	**46,948**	**46,415**	**47,572**	**49,030**	**50,502**	**51,830**

Table 37: Population profile: Outside Yorkshire Dales National Park - **PG-Short-Term-X-Fixed**

Age	2001	2011	2014	2020	2025	2030	2035
0-15	8,217	8,406	8,281	8,549	8,658	8,463	8,282
16-24	5,375	7,351	5,921	5,574	5,575	5,879	5,935
25-44	11,981	12,220	12,130	11,102	11,098	10,977	11,109
45-64	9,444	11,416	11,676	11,908	11,045	9,923	8,804
65-79	4,315	5,611	6,376	7,016	7,615	8,088	8,642
80+	1,540	1,944	2,030	2,504	2,988	3,732	4,160
Total	**40,872**	**46,948**	**46,415**	**46,653**	**46,978**	**47,062**	**46,931**

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