

Greater Essex

Demographic Forecasts 2012-2037

Phase 5 Main Report

Commissioned by the Essex Planning Officers Association (EPOA)

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Contact Details

Edge Analytics Ltd.

Leeds Innovation Centre

103 Clarendon Road

Leeds

LS2 9DF

0113 384 6087

www.edgeanalytics.co.uk

Acknowledgements

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Foreword

The era of regional planning through Regional Spatial Strategies has been replaced by a more localised approach to decision making regarding local growth and future development. This change has placed new and challenging responsibilities on local planning authorities to consider future growth levels for their own areas.

Local planning authorities retain responsibility for establishing spatial planning strategies for their area through preparation of Local Plans. Responsibility for establishing the level of future housing provision in their area will in future rest solely with the individual local planning authorities. A key part of estimating this future provision will be an objective assessment of the likely future population of each authority's area and the implications for housing, jobs, infrastructure, services and facilities.

The Essex Planning Officers Association (EPOA) has identified the need for continued collaboration between authorities on the preparation and use of demographic information. EPOA views the availability of robust and consistent demographic information and forecasts across a wide area as a vital component in any local planning authority evidence base; this then facilitates more informed discussion regarding future development with local communities, neighbouring authorities, infrastructure and service providers, developers and others. In particular, demographic data is a key component to inform and mobilise the 'duty to cooperate' which the Localism Act places on authorities, their neighbours and other organisations when engaged in policy development and Local Plan preparation.

The original EPOA project commissioned a programme of work conducted in four phases and concluded in summer 2012. A range of demographic forecasts representing a variety of scenarios were produced, together with a range of relevant demographic material. EPOA has now extended this commission to provide an annual update to the demographic forecasting evidence for its member authorities. This new evidence continues to include a variety of scenarios, including migration-led, dwelling-led and economic-led approaches to demographic forecasts.

It is not the intention of this project to produce a recommended or preferred demographic forecast for any area. Rather, the approach is to encourage examination of the demography of each area from different perspectives. Hopefully this will allow appreciation of how the demography of an authority may be influenced by local circumstances and local policy choices. It

is for each local planning authority to determine its use of the forecasts and other outputs from this project to inform its future spatial policy development.

EPOA represents the twelve Local Planning Authorities in Essex, as well as the two unitary authorities of Southend-on-Sea and Thurrock and the County Council of Essex. The Association has also extended a welcome to East Hertfordshire District Council and Welwyn-Hatfield Borough Council as full contributing members of the project. The project also includes preparation of demographic forecast scenarios for additional local planning authorities which are not contributing to the project. This broader approach has been taken in order to provide EPOA members with equivalent demographic data for all their neighbouring authorities or sub-regional partners. This feature of the project is intended to facilitate the 'duty to cooperate' for all EPOA member authorities.

I trust that you find this initiative by the Association to be informative and of assistance at this time of change and uncertainty.

John de Wilton Preston
Chairman, Essex Planning Officers Association

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1. Introduction

Context

- 1.1 With the revocation of the Regional Spatial Strategy (RSS), the development of housing requirements for Local Plans is now very much the responsibility of individual local authorities. The National Planning Policy Framework (NPPF)¹ and the draft National Planning Practice Guidance (NPPG)² provide detailed guidance on the objective assessment of housing need and the Planning Advisory Service (PAS) and Local Government Association (LGA) have together published their own 'ten key principles' for achieving the same objective³.
- 1.2 The Essex Planning Officers Association (EPOA) has maintained its commitment for continued collaboration between authorities in the preparation and use of demographic information to support Local Plan development. EPOA views the availability of robust and consistent demographic information and forecasts across a wide area as a vital component in any local planning authority evidence base; facilitating more informed discussion regarding future development with local communities, neighbouring authorities, infrastructure and service providers, developers and others. In particular, demographic data is a key component to inform and mobilise the 'duty to cooperate' which the Localism Act places on authorities, their neighbours and other organisations when engaged in policy development and Local Plan preparation.
- 1.3 During 2010-12, EPOA commissioned a programme of work which delivered a range of demographic forecasts for its member authorities, providing a suite of scenarios from which future growth trajectories might be evaluated. This project was conducted in four phases and concluded in summer 2012.
- 1.4 EPOA has now extended this commission to provide an annual update to the demographic forecasting evidence for its member authorities. This new evidence continues to include a variety of scenarios, including migration-led, dwelling-led and economic-led approaches to demographic forecasts.

¹ CLG. March 2012. *National Planning Policy Framework*

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf.

² CLG. *National Planning Practice Guidance*. <http://planningguidance.planningportal.gov.uk/blog/guidance/>.

³ PAS and LGA. April 2013. *Ten Principles for Owning Your Housing Number: Finding Your Objectively Assessed Needs*. http://www.pas.gov.uk/4-plan-making/-/journal_content/56/332612/4077684/ARTICLE#sthash.BXIPgyB7.dpuf.

Work programme

- 1.5 This new commission is organised into three phases, continuing from the original programme of work, as follows:
- 1.6 **Phase 5: December 2013 – February 2014**
- This phase will include an update to the previous EPOA demographic forecasts and evidence to take account of: 2011 Census statistics; revisions to mid-year population estimates for 2002-10; the new 2011-based household projections; 2012 mid-year estimates; and the latest forecasts of economic growth.
- 1.7 **Phase 6: June 2014 – July 2014**
- This phase will incorporate the latest evidence from: the Office for National Statistics (ONS) 2012-based sub-national population projections; the latest forecasts of economic growth and will include a number of changes to the POPGROUP methodology that have been implemented during Q1 2014.
- 1.8 **Phase 7: to be confirmed but likely to be Q1 2015**
- Timing on the third phase of work has yet to be confirmed but will include updates to take account of new household projections (scheduled for Q4 2014), the latest mid-year population estimates and the latest forecasts of economic growth.
- 1.9 This document provides a summary of the Phase 5 analysis and forecasts.

Forecasting methodology

- 1.10 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 1) is a cohort component model, which enables the development of population forecasts based on births, deaths and migration inputs and assumptions.
- 1.11 The Derived Forecast model (Figure 2) sits alongside the population model, providing a headship rate model for household projections and an economic activity rate model for labour-force projections.

- 1.12 POPGROUP models are used extensively by local authorities across the UK, providing a desktop utility for the evaluation of alternative growth scenarios to support local planning. Under licence to the Local Government Association (LGA), Edge Analytics provides product development and technical support to the product suite and its user base.
- 1.13 For a more complete review of the functionality and methodology which underpin POPGROUP and the Derived Forecast model, users are referred to the respective user manuals, available from the POPGROUP website: <http://www.popgroup.org.uk/>.

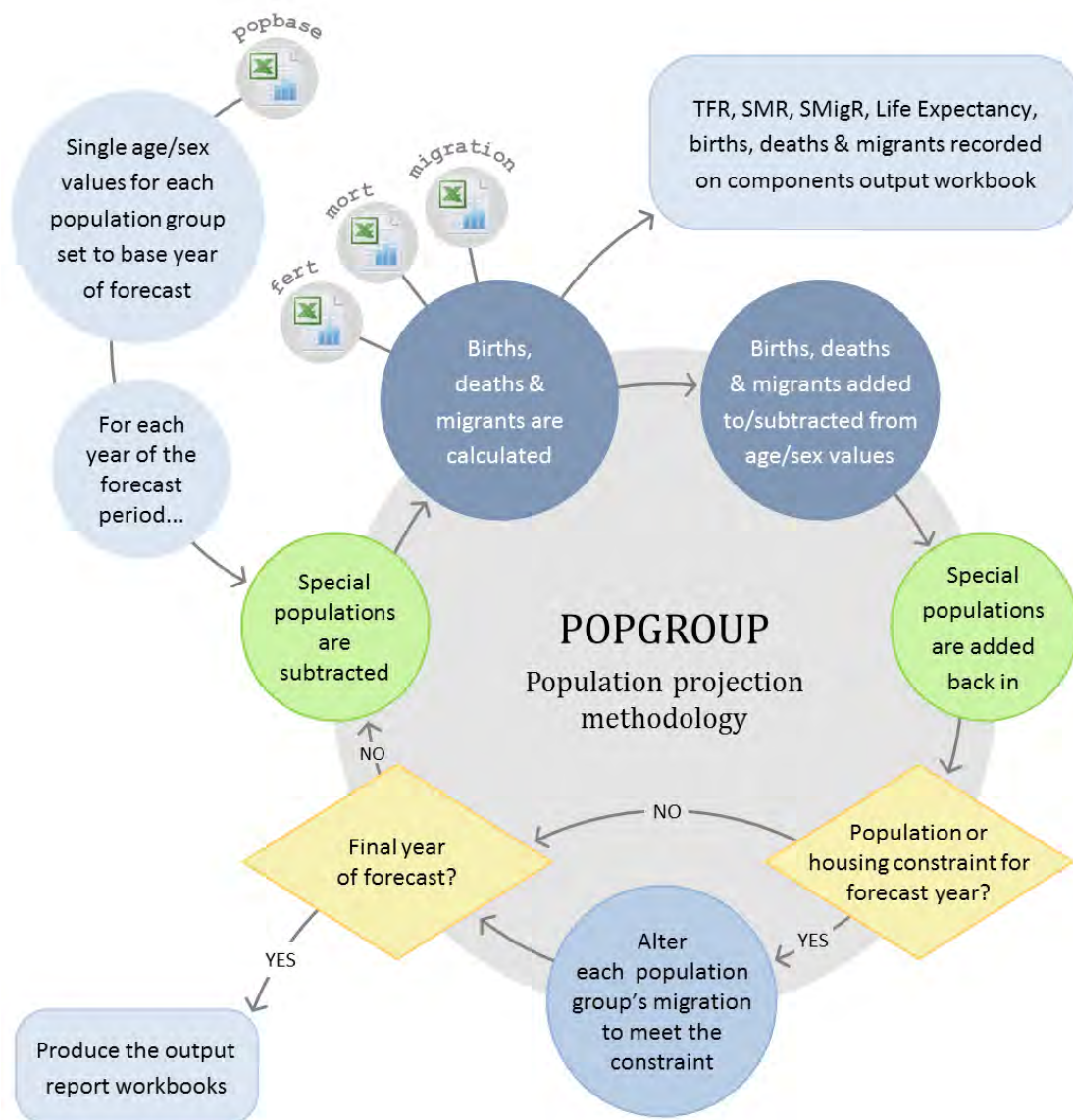
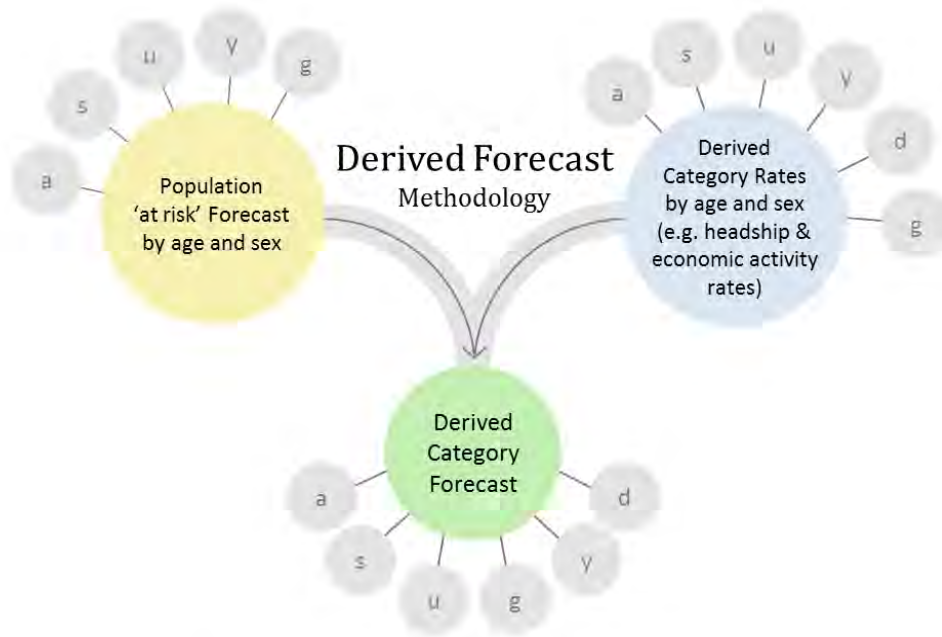


Figure 1: POPGROUP population projection methodology



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

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

Figure 2: Derived Forecast (DF) methodology

EPOA geography

1.14 The EPOA geographical area of interest encompasses a total of 24 local authority districts and unitary authorities plus a number of 'macro' areas, created as aggregates of these (Figure 3). Analysis, forecasting and reporting has been undertaken for each of these defined geographical areas.

Districts & Unitary Authorities				
ID	ONS old Area Code	ONS new Area Code	Area	Short label
1	22UB	E07000066	Basildon	BAS
2	22UC	E07000067	Braintree	BTE
3	22UD	E07000068	Brentwood	BRW
4	22UE	E07000069	Castle Point	CPT
5	22UF	E07000070	Chelmsford	CHL
6	22UG	E07000071	Colchester	COL
7	22UH	E07000072	Epping Forest	EPF
8	22UJ	E07000073	Harlow	HLW
9	22UK	E07000074	Maldon	MAL
10	22UL	E07000075	Rochford	ROC
11	22UN	E07000076	Tendring	TEN
12	22UQ	E07000077	Uttlesford	UTT
13	00KF	E06000033	Southend-on-Sea	SOS
14	00KG	E06000034	Thurrock	THU
15	12UB	E07000008	Cambridge	CamCity
16	12UG	E07000012	South Cambridgeshire	SCambs
17	26UB	E07000095	Broxbourne	Brox
18	26UD	E07000097	East Hertfordshire	EHerts
19	26UL	E07000104	Welwyn Hatfield	WelHat
20	42UB	E07000200	Babergh	Babergh
21	42UD	E07000202	Ipswich	Ipswich
22	42UE	E07000203	Mid Suffolk	MidSuff
23	42UG	E07000205	Suffolk Coastal	SufCoast
24	42UF	E07000204	St. Edmundsbury	StEdmun
Macro Areas				
ID	Definition	Area	Short label	
25	1-12	Essex CC	EssexCC	
26	1-14	Greater Essex	GtrEssex	
27	1, 4, 10, 13, 14	Essex Thames Gateway	EsxTham	
28	3, 5, 9	Heart of Essex	HrtEssex	
29	2, 6, 9, 11	Essex Haven Gateway	EssexHG	
30	20-23	Suffolk Haven Gateway	SufflkHG	
31	2, 6, 9, 11, 20-23	Haven Gateway	HG	
32	7, 8, 12	West Essex	Wessex	
33	17, 18	Hertfordshire (East)	EastHert	
34	7, 8, 12, 17, 18	Stansted/M11 Corridor	StansM11	
35	7, 8, 18	Harlow Joint Working Area	Harlow	

Figure 3: EPOA study area definition

Report Structure

- 1.15 Section 2 provides a short commentary on the latest demographic evidence that has been incorporated into the evidence presented in this report.
- 1.16 Section 3 describes the suite of scenario alternatives, developed to evaluate growth trajectories based upon demographic and economic assumptions
- 1.17 Section 4 summarises the outcomes of each of these scenarios, presenting growth in terms of population, households, dwellings, labour force and jobs impacts for each of the 24 EPOA local authorities.
- 1.18 Section 5 provides a short summary of the analysis and an indication of the likely content of the Phase 6 analysis.
- 1.19 The Appendix to this document contains guidance on the data inputs and assumptions used in the development of the scenarios.
- 1.20 An accompanying report provides scenario summaries for each of the 11 Macro Areas within the EPOA study area (Figure 3).

2. Summarising the new demographic evidence

Official statistics

- 2.1 Robust and timely population statistics are the most important component of the evidence required to support the assessment of housing requirements. They provide both an historical perspective on demographic growth and the basis for long-term projections of change. The current and evolving age structure of local populations drives the estimation of the likely levels of household formation and the changing size and shape of the resident labour force.
- 2.2 The UK does not have a population register and so relies on the ten-yearly Census for its definitive statistics on local populations (Figure 4). Between Censuses, mid-year population ‘estimates’ are published by the Office for National Statistics (ONS), taking account of the impact of births, deaths, internal migration and international migration upon each local authority’s population. International migration is the most volatile component of demographic change and the most difficult to estimate accurately. Its sub-national estimation methodology has been subject to significant revision resulting in the re-calibration of mid-year population estimates over the course of the 2001-2011 decade.

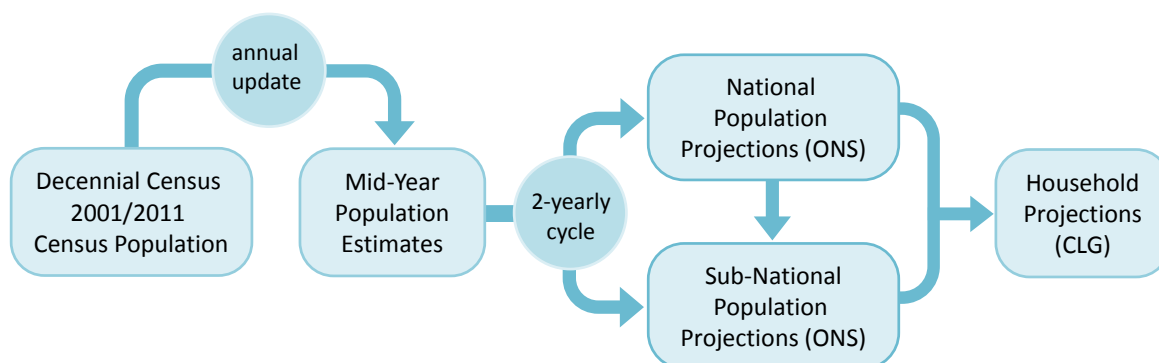


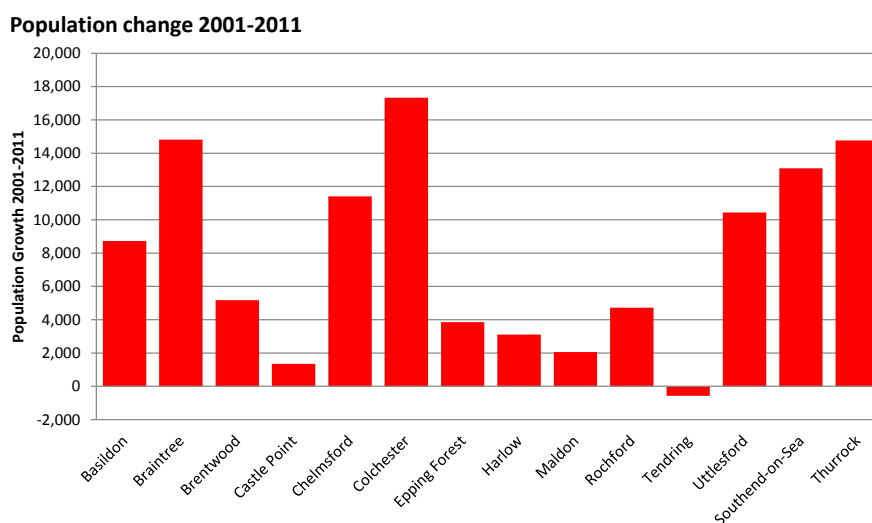
Figure 4: Official statistics on population and household estimates and projections

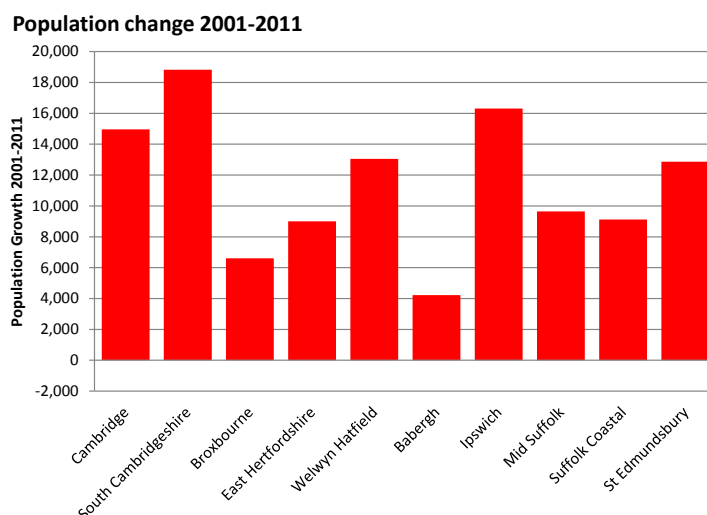
- 2.3 Every two years, ONS publishes a ‘national’ population projection for the UK and its constituent countries, including a ‘principal’ projection of growth and a series of ‘variant’ projections which test the sensitivity of fertility, mortality and migration assumptions upon growth. A national projection with a starting year of 2010 is referred to as the ‘2010-based’ national population projection, using historical statistics from a prior 5-year period to calibrate its migration assumptions.

- 2.4 The national projection is followed by the publication of 'sub-national' population projections, providing an indication of likely growth in each local authority area over a 25-year projection horizon. No 'variant' alternatives are provided at a sub-national level but migration assumptions are again typically based upon a prior 5-year period, with the '2010-based' naming convention consistent with the national projections.
- 2.5 With a continuous cycle of new statistical releases, the release of 2011 Census data, plus a number of fundamental changes to estimation and projection methods over the last decade, the selection of demographic evidence on which to base the development of long-term housing plans has been a challenging proposition for local planners. The timing at which evidence is formulated can have an important bearing on growth outcomes.

Population estimates & components of change

- 2.6 The 2011 Census has provided a timely and definitive update on local population statistics. The 2011 Census population statistics (and subsequent 2011 mid-year population estimate) have provided a definitive perspective on change over the 2001-2011 decade.
- 2.7 This suggests substantial variation in the level of population change between EPOA local authorities 2001-2011 (Figure 5). For example, Colchester and South Cambridgeshire have experienced the largest absolute change in population; Castle Point the lowest growth. Tendring's statistics suggest a population decline over the decade.





Source: ONS

Figure 5: Population change - 2001-2011

- 2.8 The publication of population statistics from the 2011 Census has also resulted in the 'rebasings' of previous mid-year population estimates. This has important implications for both the interpretation of historical evidence on demographic change in local authority areas and on the derivation of projections of future growth based upon this evidence.
- 2.9 The rebasing of mid-year population estimates has had a variable impact upon local authorities within the EPOA study area. Figure 6 lists the EPOA local authorities for which the revised mid-year estimates were higher than the pre-Census 2011 estimates (upward adjustment) and for which they were lower (downward adjustment).

Population (upward adjustment)	Population (downward adjustment)
Babergh	Castle Point
Basildon	Colchester
Braintree	East Hertfordshire
Brentwood	Epping Forest
Broxbourne	Maldon
Cambridge	Suffolk Coastal
Chelmsford	Tendring
Harlow	Thurrock
Ipswich	Welwyn Hatfield
Mid Suffolk	
Rochford	
South Cambridgeshire	
Southend-on-Sea	
St. Edmundsbury	
Uttlesford	

Figure 6: Population rebasing following the 2011 Census

- 2.10 In rebasing population, ONS has made allowances for methodological adjustments and has made amendments to estimated errors in the components of population change during the 2001-2011 decade. Any residual difference in the population estimates, that could not be attributed to neither the methodological adjustments nor the estimated errors in the components of population change, has been classified as 'Unattributable Population Change' (UPC)⁴.
- 2.11 The final adjustment of each local authority's mid-year population estimate has been made with the application of an average UPC over the mid-2002 to mid-2011 period, using a cohort method to account for age-group transitions over time.
- 2.12 ONS identifies a number of factors that may have contributed to its UPC estimate:
- The accuracy of the 2001 and/or 2011 Census count, although adjustments were made to improve the quality of the 2001 Census and the 2011 Census is considered to be of a high quality;
 - Internal migration inaccuracies relating to onward student moves that may be subject to time-lags between moving and re-registering;
 - Redefinition of prisoner populations which will have had a relatively small impact upon local authorities with a prison population;
 - Difficulties associated with the robust estimation of international migration and the fact that the new methods for distributing immigration down to local authority level have only been applied to the years ending mid-2006 onwards
- 2.13 On the assumption that the 2001 and 2011 Censuses provide a robust count of a local authority's population, that births and deaths are robustly recorded through vital statistics registers and that internal migration is adequately measured through the process of GP registration, it is most likely that the UPC is primarily due to the difficulty associated with the estimation of immigration and emigration impacts at a local level.

⁴ 2012-based Subnational Population Projections for England – Report on Unattributable Population Change. Office for National Statistics, January 2014.

<http://www.ons.gov.uk/ons/about-ons/get-involved/consultations/consultations/consultation-on-the-2012-based-subnational-population-projections-for-england/index.html>

- 2.14 In this Phase 5 report, the uncertainty associated with the UPC component has required the evaluation of a range of scenarios which consider how the UPC might affect long-term migration assumptions. The UPC component is both included and excluded from international migration assumptions to evaluate how the different approaches might affect trajectories of population and household growth in individual EPOA local authorities.

Population projections

- 2.15 The significance of the changes to the historical estimates of population growth is that they form a key component of the derivation of migration assumptions in trend projections (Figure 7). A downward adjustment in the population estimate for 2001-2011 will typically mean a lower growth trajectory in subsequent projections. Conversely, an upward adjustment will typically mean a higher growth trajectory in subsequent projections.

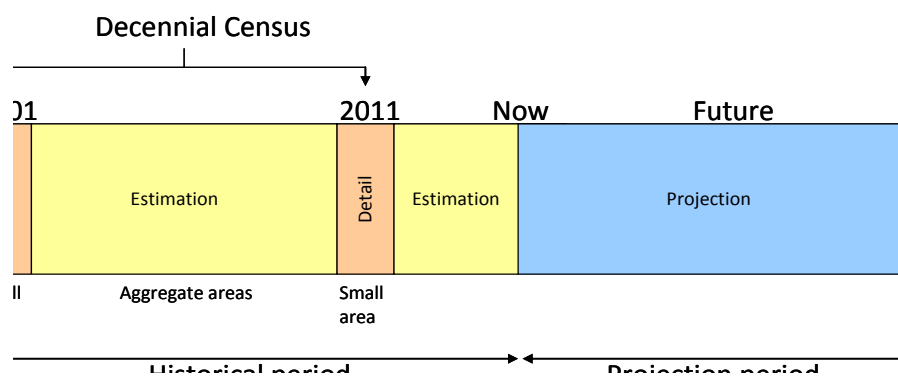


Figure 7: Census statistics, mid-year estimates and population projections

- 2.16 Any change to population projections will have an effect upon household projections, which ultimately provide the basis for the assessment of housing need. It is therefore essential that due consideration is given to the full range of statistical evidence that has resulted from the definitive population counts derived from the 2011 Census.
- 2.17 With the publication of the 2011 Census, ONS released an 'interim' 2011-based population projection. Unfortunately, this projection has failed to follow ONS' normally robust rules on the calculation of long-term assumptions. Instead it has simply applied the migration (and fertility and mortality) assumptions from the 2010-based model to a 2011 Census base population. This is inappropriate for two key reasons: firstly, the revisions to the historical mid-year populations and

the subsequent change in the historical impact of migration have not been taken into account; secondly, the 2011 Census population has a different age structure to the previous 2010-based population data. Both of these issues result in a 2011-based projection that is not sufficiently robust to underpin any analysis of long-term housing requirements.

- 2.18 The scenarios presented in this Phase 5 report include scenarios that use the updated evidence on historical change to derive alternative ‘migration-led’ trend projections. These scenarios use both a five-year and ten-year history of population change in each local authority area to derive migration assumptions for a ‘Migration-led 5yr’ and a ‘Migration-led 10yr’ projection of growth (which both include and exclude the UPC component). These scenarios provide a direct contrast to previous official projections and to forecasts that are linked directly to estimates of future employment growth in each local authority area.

Household projections

- 2.19 Sub-national population projections provide the basis for the formulation of sub-national household projections. During the 2001-2011 decade the household projection methodology has been subject to substantial review, with a new approach adopted between the 2006-based and 2008-based outputs.

- 2.20 A household is defined as:

“One person living alone, or a group of people (not necessarily related) living at the same address with common housekeeping - that is, sharing a living room or sitting room or at least one meal a day.”⁵

- 2.21 In a household projection model, rates of household growth are determined by two factors: first, the profile and change in household ‘headship rates’ (also referred to as household representative rates in CLG documentation) by household type, age and sex; and second, the underlying rate of population growth (excluding the ‘communal establishment’ population).

- 2.22 The 2011-based household projections replace the previous, 2008-based household projections. They provide an update on likely household growth trajectories, taking account of the unprecedented economic conditions that have affected local communities since 2008 and the

⁵ CLG. *Household Projections: Notes and Definitions for Data Analysts*
<https://www.gov.uk/household-projections-notes-and-definitions-for-data-analysts>

continuing impact of international migration upon population change. The projected household headship rates used in the 2011-based household model have been derived using 2001 and 2011 Census data in combination with statistics from the Labour Force Survey (LFS).

- 2.23 The general trend in the 2011-based projections suggests a reduction in the anticipated rate of household growth from 2011 to 2021, compared to previous projections.
- 2.24 The revised 2011-based headship rates have had the most significant impact upon single-person households (OPMAL, OPFEM) and family households with no children (FAMC0). This has been slightly offset by increases in formation rates for households comprising a couple with one and two dependent children (FAM C1, FAM C2), a couple and one or more other adults with no dependent children (MIXC0) and the miscellaneous 'Other' (OTHHH) classification.
- 2.25 The 2011-based household model projections are underpinned by the interim 2011-based population projection from ONS. This projection uses 2011 Census statistics for its base period population, but uses assumptions from the 2010-based population projection to define its fertility, mortality and migration components of change. For the reasons outlined in the previous section, the 2011-based population projections do not provide a suitably robust 'trend' projection of population change on which to base household projections for local authority areas.
- 2.26 For the analysis presented in this Phase 5 report, all population growth scenarios are evaluated using both the 2008-based and the 2011-based household formation rate assumptions. This provides a range of household and dwelling growth outcomes that consider the uncertainty associated with the future trajectory of household formation that are a key concern for long-term housing plans in local authorities⁶.

Economic forecasts

- 2.27 A key component of demographic forecasting is its relationship with the speed and scale of economic growth. At a time of such significant demographic and economic change, the development of forecasts of future jobs growth has been particularly challenging and subject to frequent revision. National and regional indicators of sectoral economic performance have continued to vary throughout the recessionary period, with a knock-on effect to the forecasts of

⁶ Planning for Housing in England. Understanding recent changes in household formation rates and their implications for planning for housing in England. RTPi Research Report.
http://www.rtpi.org.uk/media/819060/rtpi_research_report_-_planning_for_housing_in_england_-_january_2014.pdf

anticipated economic recovery in local areas.

2.28 The East of England Forecasting Model (EEFM) provides a dynamic and detailed framework for the derivation of economic forecasts for local authorities within the EPOA study area. The data which underpins the EEFM is updated on an annual basis. Historic data for most EEFM variables have been collected over a 20-year period to provide a basis for forecasting future growth. Forecasts typically incorporate a 20-year horizon, with outputs including:

- Employment (jobs) and Gross Value Added (GVA) by 29 industry sectors;
- Number of employed people by workplace;
- Unemployment totals;

2.29 The latest round of local economic forecasts released by the EEFM, were published in Q4 2013. These statistics provide the basis for the evaluation of 'employment-led' forecasts presented in this Phase 5 report, for direct comparison with official projections and more recent trend forecasts.

2.30 For each local authority, two economic forecasts have been used to evaluate the likely impact upon the demographic composition of each area: (i) employment growth; and (ii) growth in the number of employed people.

2.31 Employment growth gives an indication of the total number of new jobs, both part-time and full-time. Converting these statistics into a 'full time equivalent' provides an associated forecast of 'employed people'

2.32 It is difficult to establish the precise relationship between part-time /full-time employment and the *future* size and profile of the labour force. Some workers may have more than one part-time job, others may rely on part-time employment as their sole source of income. Both the 'jobs' and 'employed people' forecasts are evaluated here to provide a range of growth outcomes that consider this uncertainty in the relationship between economic and demographic change.

2.33 An indication of the latest EEFM 'jobs' ('Total employment') and 'employed people' ('Total workplace employed people') forecasts for each EPOA local authority are illustrated (Table 1), presenting anticipated growth over the 2013-2031 horizon. To ensure consistency with other scenarios, growth statistics for the final year of the economic forecast are continued to 2037.

Table 1: Employment forecasts - average annual net new jobs

Area Name	Average annual net new jobs (2013 - 2031)	
	Total workplace employed people	Total employment
Basildon	242	258
Braintree	391	411
Brentwood	316	321
Castle Point	12	11
Chelmsford	923	967
Colchester	689	735
Epping Forest	405	464
Harlow	193	222
Maldon	105	119
Rochford	59	68
Tendring	189	185
Uttlesford	281	315
Southend-on-Sea	307	362
Thurrock	884	926
Cambridge	857	1,042
South Cambridgeshire	821	834
Broxbourne	250	284
East Hertfordshire	518	600
Welwyn Hatfield	915	1,050
Babergh	97	113
Ipswich	513	581
Mid Suffolk	185	221
Suffolk Coastal	423	483
St Edmundsbury	257	288

Source: EEFM 2013

Note: The employment-led scenarios which are presented in this Phase 5 analysis have assumed that the jobs growth anticipated in 2031 is extended to each year of the extended 2032-37 forecast period.

2011 Census economic activity and commuting statistics

- 2.34 The 2011 Census has provided an important update to two key sources of evidence to support the evaluation of the demographic consequences of economic change: age-specific economic activity rates and commuting balances for individual local authority areas.
- 2.35 Economic activity rates provide an indication of the size of the labour force in each local authority area; the basis for the evaluation of the effect of anticipated jobs growth upon the resident population.
- 2.36 There have been important changes to economic activity rates over the last decade, with increasing labour force participation in the older age-groups (both males and female) and a general increase in female participation across all age-groups (aged 25+). Further changes are anticipated as accelerated changes to the State Pension Age (SPA) take effect and as larger, healthier cohorts of the population move into the 'traditional' 65+ retirement age groups.
- 2.37 The scenarios presented in this Phase 5 report incorporate the latest evidence on economic activity rates from the 2011 Census and evaluate the impact of changing rates of economic participation upon the size and profile of the resident labour force in EPOA local authority areas. More detail on these data inputs and assumptions is provided in the Appendix to this report.
- 2.38 The robust measurement of the commuting balance associated with each local authority area is also important in the evaluation of anticipated jobs growth forecasts. The 'commuting ratio' that is used with the forecasting model measures the relationship between the size of the resident labour force and the number of jobs available locally. Local authorities can either have a net in-commute (where the number of jobs available is higher than the size of the local labour force) or a net out-commute where the reverse applies.
- 2.39 Commuting ratios have typically been derived from 2001 Census statistics on travel-to-work or more recent evidence from the Annual Population Survey (APS). The first source is now a little dated, whilst the second source is subject to sampling error.
- 2.40 Whilst the 2011 Census has yet to release its new travel-to-work statistics, the recent publication of 'workday population' data, has enabled an updated commuting ratio to be defined and used within the scenario analysis presented here. Once again, more detail on these data inputs and assumptions is provided in the Appendix to this report.

3. Developing alternative growth forecasts

Scenario Context

- 3.1 The NPPF provides guidance on the development of a robust evidence base to support the development of local housing plans. The guidance makes it clear that data inputs, assumptions and methodology should be robust and should consider future growth potential from a number of perspectives.
- 3.2 For any local authority area, there is no single, definitive view on the likely level of future growth, with a mix of economic, demographic and national/local policy issues ultimately determining the speed and scale of change. For local planning purposes, it is necessary to evaluate a range of growth alternatives to establish the most 'appropriate' basis for determining future housing requirements.
- 3.3 The development of evidence to support housing development is made considerably more challenging by the dynamic nature of key data inputs. Economic and demographic factors, coupled with the continuous release of new statistics, often undermine the robustness of underpinning evidence. This has been a particular issue during 2013, with the release of new 2011 Census statistics, updated household projections and revisions to historical population estimates.
- 3.4 The use of a recognised forecasting product (e.g. POPGROUP), which incorporates industry-standard methodologies (i.e. a cohort component model for population forecasting and a headship rate model for household forecasting) ensures a robustness of approach and enables a focus on assumptions and output, rather than methods.
- 3.5 Transparency is an important component of any forecasting analysis. It is necessary to ensure that all data inputs and assumptions are clearly documented and justified and that outcomes are benchmarked against the latest 'official' forecasts, wherever possible.
- 3.6 The scenarios that have been developed for the EPOA authorities include the following:
- Official projections from ONS (2010-based and 2011-based);

- Updated ‘migration-led’ trend forecasts using the latest demographic evidence, including an assessment of the importance of the UPC component.
- Economic growth trajectories, as detailed in East of England Forecasting Model (EEFM) developed by Oxford Economics.

3.7 Each scenario has been evaluated using both 2011-based (Option A) and 2008-based (Option B) household headship rates, providing a ‘range’ of household and dwelling growth options for consideration.

3.8 All scenarios have been produced with a 2012 base year and a horizon of 2037.

3.9 Information on the data inputs and assumptions underpinning the scenarios can be found in the Appendix to this document.

Scenario Definition

Official projections

3.10 In all scenario analysis it is important to ‘benchmark’ any growth alternatives against the latest ‘official’ population projection.

3.11 With the publication of the 2011 Census, ONS released an ‘interim’ 2011-based population projection. Unfortunately, this projection has failed to follow ONS’ normally robust rules on the calculation of long-term assumptions. Instead, the migration (and fertility and mortality) assumptions from the 2010-based model have been applied to a 2011 Census base population. This is inappropriate for two key reasons: firstly, the revisions to the historical mid-year populations and the subsequent change in the historical impact of migration have not been taken into account; secondly, the 2011 Census population has a different age structure to the previous 2010-based population data. Both of these issues mean that the 2011-based projection is not sufficiently robust to underpin any analysis of long-term housing requirements.

3.12 Whilst the 2011-based projection is included in the scenario illustrations, the 2010-based sub-national population projection (SNPP-2010) from ONS is used in this analysis as the trend benchmark. This scenario has been developed using historical evidence from the period 2006–2010 and incorporates long-term assumptions on fertility, mortality and international migration

that were defined in the 2010-based national population projection for England.

- 3.13 The SNPP-2010 scenario is scaled to ensure consistency with the 2011 mid-year population estimate, following its designated growth trend thereafter.

Alternative trend projections

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

- 3.15 In determining the migration assumptions for a new trend projection, historical data on the components of demographic change during the 2001–2012 time period is a key consideration. A five-year historical period is a typical time-frame from which migration ‘trend’ assumptions are derived. This is consistent with the ONS official methodology. However, given the unprecedented economic changes that have occurred since 2008, it is important to give due consideration to an extended historical time period for assumption derivation.

- 3.16 Alternative trend scenarios are as follows:

- **Migration-led 5yr:** internal and international migration projection assumptions are based on five years of historical evidence (2007/8 – 2011/12);
- **Migration-led 10yr:** internal and international migration projection assumptions are based on ten years of historical evidence (2002/3 – 2011/12);
- **Natural Change:** in-migration, out-migration, immigration and emigration projection assumptions are each set to zero, with only births and deaths determining growth;
- **Net Nil:** migration assumptions are maintained but in-migration and out-migration, as well as immigration and emigration, are set to balance each other, i.e. the net impact of migration is zero.

- 3.17 Section 2 has discussed how the ‘rebasings’ of mid-year population estimates has resulted in considerable uncertainty with regard to the components of population change during the 2001–2011 inter-censal period. ONS has indicated that it does not intend to take explicit account of the

important UPC component when deriving its forthcoming 2012-based SNPP⁷. This could have significant implications for those authorities where the 2011 Census has resulted in relatively large adjustments to previous mid-year population estimates.

3.18 The trend scenarios listed above assume that the UPC component is accounted for in the international migration assumptions. The uncertainty associated with the UPC suggests that a sensitivity test on its importance is appropriate. Two further ‘Migration-Led’ scenarios have been developed as follows:

- **Migration-led 5yr-X:** internal and international migration assumptions are based on the last five years of historical evidence, ignoring the UPC element of the ONS mid-year estimate rebasing exercise.
- **Migration-led 10yr-X:** internal and international migration assumptions are based on the last 10 years of historical evidence, ignoring the UPC element of the ONS mid-year estimate rebasing exercise.

Employment-led forecasts

3.19 The impact of an anticipated growth in employment can also be evaluated using an ‘employment-led’ population forecast.

3.20 Forecasting models are able to evaluate the impact of a particular jobs growth trajectory upon demographic change by measuring the relationship between the number of jobs in an area, the size of its labour force and the size of the resident population. In modelling the potential impact of jobs growth, three key parameters are used: economic activity rates by age and sex; an unemployment rate for the district; and a commuting ratio for the district.

3.21 Economic activity rates control the relationship between the size of the population and the size of the labour force. The unemployment rate and the commuting ratio determine the relationship between the size of the labour force and the number of jobs available.

3.22 If there is an ‘imbalance’ between the ‘target’ number of new jobs and the resident population, then migration is used to redress the imbalance. A higher level of net in-migration will occur if

⁷ 2012-based Subnational Population Projections for England – Report on Unattributable Population Change. Office for National Statistics, January 2014.

<http://www.ons.gov.uk/ons/about-ons/get-involved/consultations/consultations/consultation-on-the-2012-based-subnational-population-projections-for-england/index.html>

there is insufficient population to meet job targets. A higher level of net out-migration will occur if the population is too high relative to job targets.

3.23 The revised 2013 'Baseline' scenario from East of England Forecasting Model (EEFM) has provided the latest employment growth forecasts for EPOA local authorities. For each of the local authorities, the EEFM model has identified a forecast of growth measured as both total employment ('Jobs') and the total workplace employed people ('Employed people') (Table 1).

3.24 These data provide the basis for the development of two employment-led demographic forecasts:

- **Jobs:** demographic change is constrained to the growth in total employment;
- **Employed people:** demographic change is constrained to the growth in the number of workplace employed people.

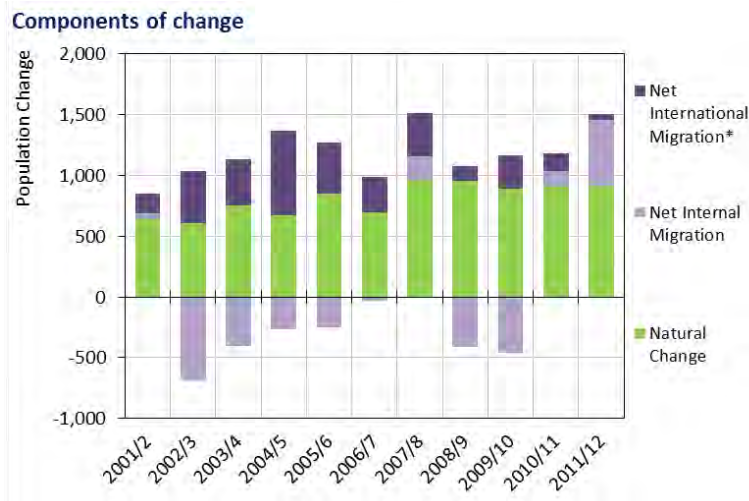
4. Area Profiles

Guidelines

- 4.1 For each of the EPOA local authorities, the new demographic evidence is summarised: first with an illustration of the 'components of change which have driven population growth between 2001-2012 (making an assumption that the UPC element is encapsulated within the international migration component); and secondly with a table of dwelling growth outcomes from the suite of scenarios that has been evaluated.
- 4.2 A more detailed summary of the results of each scenario forecast is provided in the form of a chart and an accompanying table of statistics. The chart illustrates the trajectory of population change resulting from each scenario. The table summarises the change in population and household numbers from 2012-2037 that result from each scenario.
- 4.3 The scenarios are ranked according to the estimated level of population change over the forecast period. Each table illustrates the average annual net migration associated with the population change, plus the expected average annual dwelling and jobs growth based on the assumptions used in each scenario.
- 4.4 Scenario results are presented in two separate illustrations, each relating to the application of different household headship rates. The 'Option A' results use the CLG 2011-based headship rates and the 'Option B' results use the 2008-based headship rates.
- 4.5 In each case, the ONS 2011-based interim population projection (SNPP-2011) is included in the chart illustrations to enable comparison with other scenarios. It has a shorter projection horizon (2011-2021) and different assumptions to the other scenarios, so is excluded from the results table.

Basildon – scenario summary

- 4.7 Natural change has been a dominant component of population change since 2001. The annual net effect of migration upon growth has varied between a net loss and a net gain. International migration has had a positive impact upon growth, whereas internal migration has seen seven years of net population loss and four years of net population gain.



*Includes the UPC component of change

- 4.8 The 'SNPP-2010' scenario demonstrates the highest growth outcome, with an 18.5% population growth expectation when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions, the 'Migration-led 5yr' and 'Migration-led 10yr' scenarios have very similar population change of 13.5-13.7%.
- 4.9 The EEFM 'Jobs' and 'Employed people' scenarios result in population growth that aligns very closely to the 'Migration-led 5yr' and 'Migration-led 10yr' scenarios, at 13.2-13.6%.
- 4.10 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is lower. The 'Migration-led 10yr – X' scenario records a growth of 10.1%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 11.6%, reflecting the differential impact of the UPC component upon historical population change.
- 4.11 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in 8.6% population growth to 2037. The 'Net-nil' scenario which maintains a

migration inflow and outflow but applies a zero migration balance, results in higher growth at 11.2%.

- 4.12 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 16.8% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.13 Considering the average of the A and B alternatives, suggests a dwelling requirement of 595-618 resulting from the 'Migration-led' and EEFM scenarios, with the 'SNPP-2010' recording an average of 730 dwellings per year.
- 4.14 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 500-551 per year.

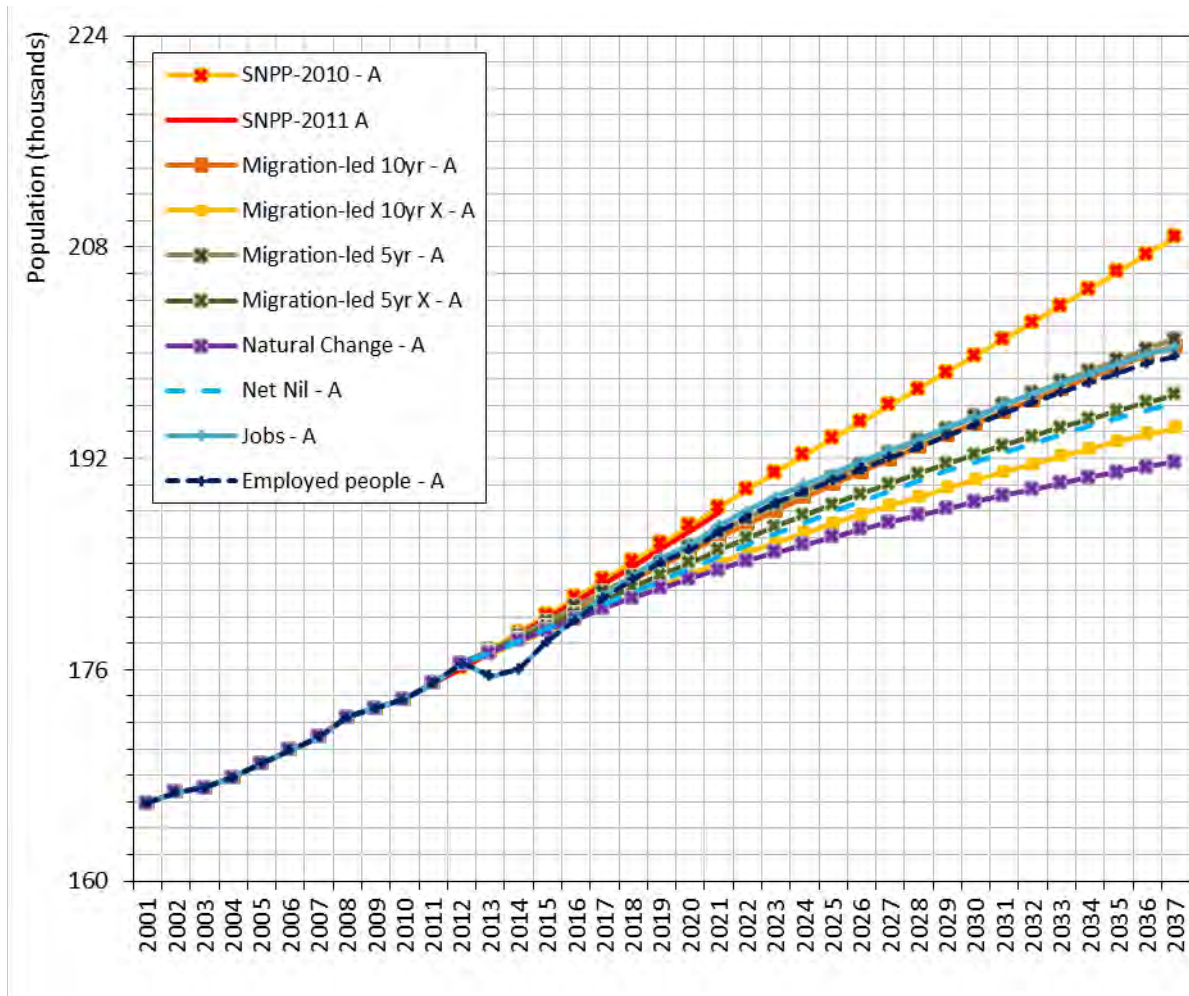
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
SNPP-2010	683	777	730
Migration-led 5yr	571	665	618
Jobs	560	653	606
Migration-led 10yr	552	647	599
Employed people	549	641	595
Migration-led 5yr X	506	597	551
Net Nil	467	555	511
Migration-led 10yr X	454	545	500
Natural Change	430	530	480

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Basildon

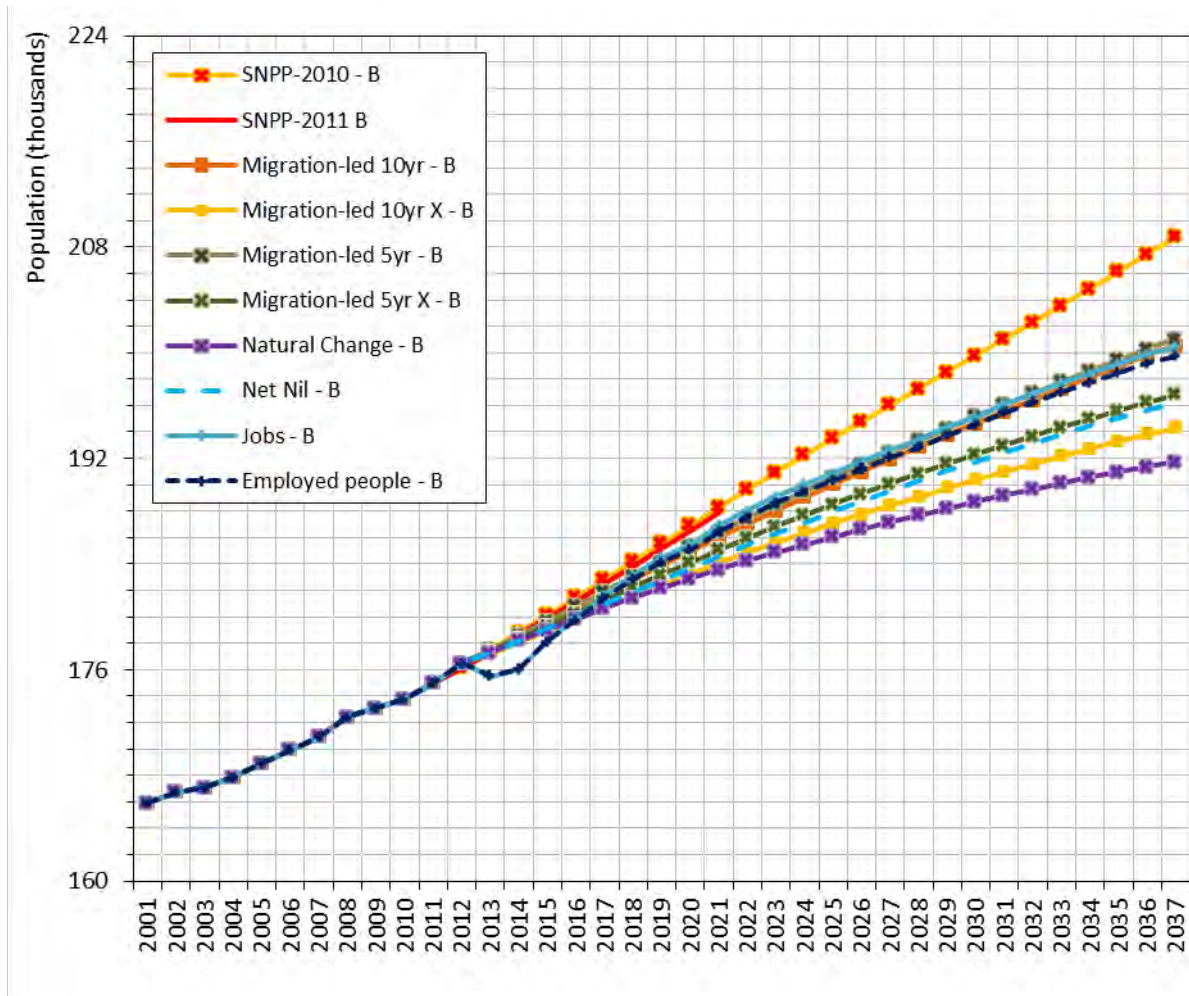
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - A	32,593	18.5%	16,790	22.8%	483	683	464
Migration-led 5yr - A	24,608	13.9%	14,025	19.1%	180	571	217
Migration-led 10yr - A	24,125	13.7%	13,554	18.4%	140	552	230
Jobs - A	23,970	13.6%	13,756	18.7%	155	560	201
Employed people - A	23,271	13.2%	13,480	18.3%	133	549	188
Migration-led 5yr X - A	20,383	11.6%	12,425	16.9%	41	506	135
Net Nil - A	19,754	11.2%	11,464	15.6%	0	467	175
Migration-led 10yr X - A	17,864	10.1%	11,155	15.2%	-64	454	106
Natural Change - A	15,248	8.6%	10,558	14.3%	0	430	-2

Basildon

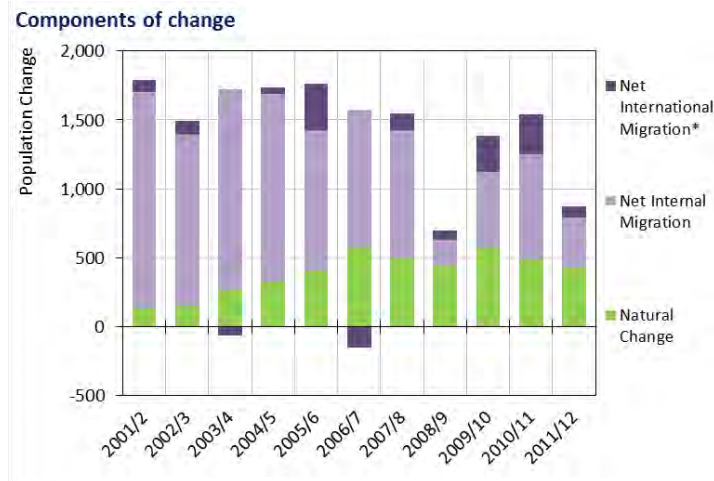
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - B	32,593	18.5%	19,082	26.0%	483	777	464
Migration-led 5yr - B	24,608	13.9%	16,328	22.2%	180	665	217
Migration-led 10yr - B	24,125	13.7%	15,889	21.6%	140	647	230
Jobs - B	23,970	13.6%	16,029	21.8%	155	653	201
Employed people - B	23,271	13.2%	15,753	21.4%	133	641	188
Migration-led 5yr X - B	20,383	11.6%	14,659	19.9%	41	597	135
Net Nil - B	19,754	11.2%	13,631	18.5%	0	555	175
Migration-led 10yr X - B	17,864	10.1%	13,397	18.2%	-64	545	106
Natural Change - B	15,248	8.6%	13,010	17.7%	0	530	-2

Braintree – scenario summary

- 4.15 A large net inflow from internal migration has been the dominant driver of growth since 2001, although its impact has reduced in the last four years. Natural change has increased in its importance as a component of population change. International migration has generally had a positive impact upon annual population growth.



*Includes the UPC component of change

- 4.16 The 'SNPP-2010' scenario suggests 23.7% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces two contrasting population forecasts. Demographic change in the last five years has been driven by relatively low growth through internal migration, compared to earlier years. This is reflected in a 'Migration-led 5yr' scenario outcome of 19.6% population growth compared to a 'Migration-led 10yr' scenario with much higher growth forecast at 27.2%.
- 4.17 In contrast to these 'trend' scenarios, the EEFM 'Jobs' and 'Employed people' scenarios result in the highest population growth; over 30% in each case when job forecasts are extended to 2037.
- 4.18 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 25.0%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 17.3%, reflecting the differential impact of the UPC component upon historical population change.
- 4.19 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving

growth, results in 5.3% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, results in lower growth at just 1.7%.

- 4.20 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 8.0% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.21 Considering the average of the A and B alternatives, suggests a dwelling requirement of 940-960 resulting from the EEFM scenarios, with the 'SNPP-2010' and 'Migration-led' scenarios recording a range of 673-837 dwellings per year.
- 4.22 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 620-787 per year.

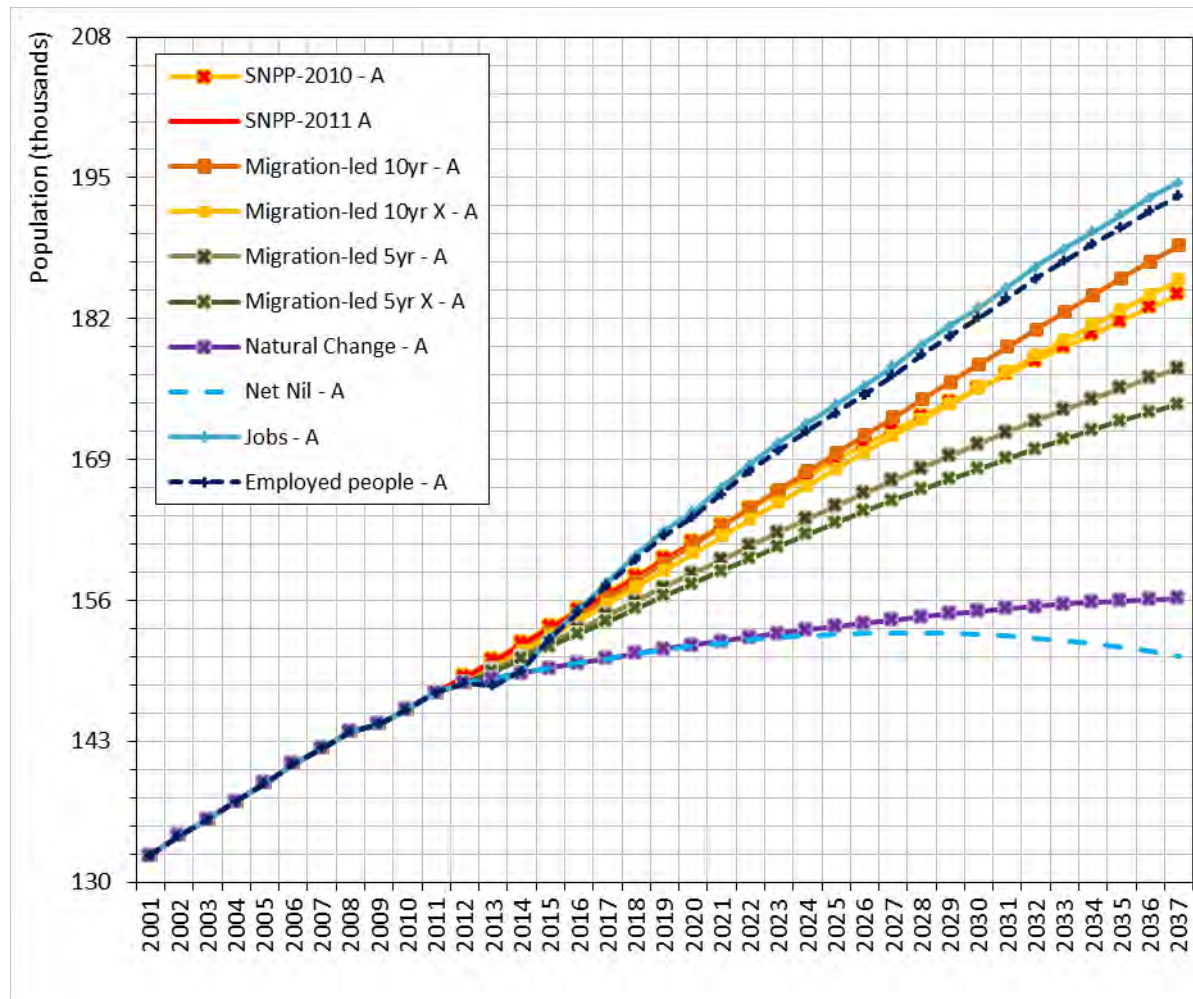
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	929	992	960
Employed people	908	971	940
Migration-led 10yr	804	869	837
Migration-led 10yr X	755	818	787
SNPP-2010	738	797	768
Migration-led 5yr	643	702	673
Migration-led 5yr X	592	649	620
Natural Change	242	305	274
Net Nil	247	288	268

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Braintree

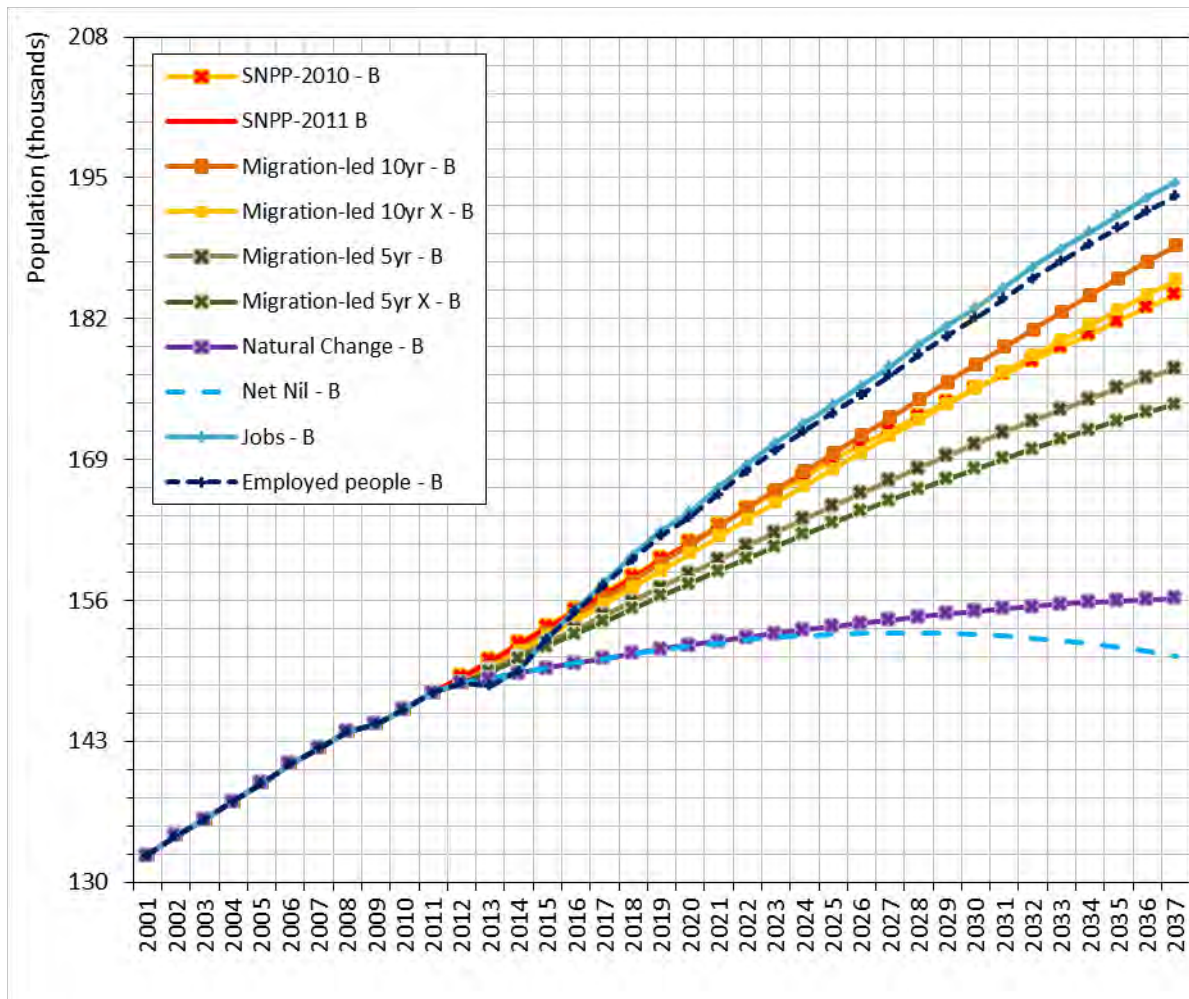
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	46,240	31.2%	22,608	36.5%	1,512	929	368
Employed people - A	45,007	30.3%	22,109	35.7%	1,470	908	349
Migration-led 10yr - A	40,384	27.2%	19,578	31.6%	1,250	804	306
Migration-led 10yr X - A	37,142	25.0%	18,382	29.7%	1,143	755	255
SNPP-2010 - A	35,262	23.7%	17,966	28.8%	1,147	738	313
Migration-led 5yr - A	29,079	19.6%	15,654	25.3%	916	643	107
Migration-led 5yr X - A	25,742	17.3%	14,403	23.3%	804	592	54
Natural Change - A	7,792	5.3%	5,884	9.5%	0	242	-127
Net Nil - A	2,511	1.7%	6,003	9.7%	0	247	-203

Braintree

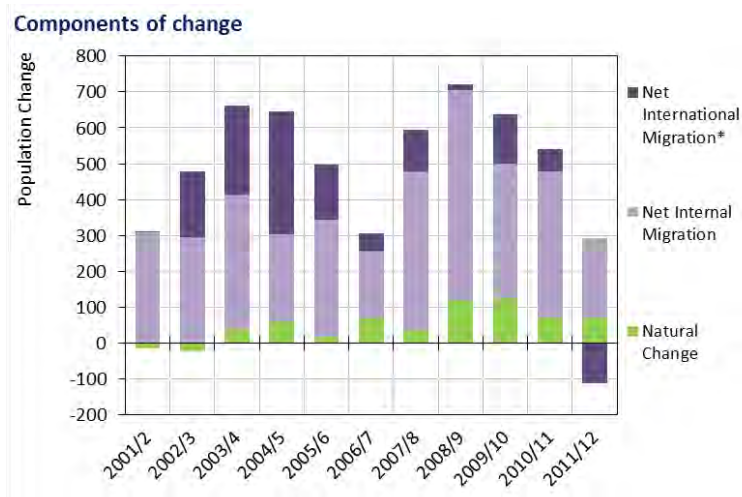
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	46,240	31.2%	24,143	39.0%	1,512	992	368
Employed people - B	45,007	30.3%	23,638	38.2%	1,470	971	349
Migration-led 10yr - B	40,384	27.2%	21,152	34.2%	1,250	869	306
Migration-led 10yr X - B	37,142	25.0%	19,914	32.2%	1,143	818	255
SNPP-2010 - B	35,262	23.7%	19,397	31.1%	1,147	797	313
Migration-led 5yr - B	29,079	19.6%	17,082	27.6%	916	702	107
Migration-led 5yr X - B	25,742	17.3%	15,789	25.5%	804	649	54
Natural Change - B	7,792	5.3%	7,430	12.0%	0	305	-127
Net Nil - B	2,511	1.7%	7,019	11.3%	0	288	-203

Brentwood – scenario summary

- 4.23 A large net inflow from internal migration has been the dominant driver of growth since 2001, at its highest during 2007-2011. With the exception of the latest year, international migration is estimated to have had a positive impact upon population growth. Natural change has increased in its importance as a component of population change but has had a relatively small impact upon annual population change.



*Includes the UPC component of change

- 4.24 The 'SNPP-2010' scenario suggests 24.1% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces two similar population forecasts, with a 'Migration-led 5yr' scenario outcome of 19.5% population growth compared to a 'Migration-led 10yr' scenario with a slightly higher growth forecast at 20.3%.
- 4.25 In contrast to these 'trend' scenarios, the EEFM 'Jobs' and 'Employed people' scenarios result in the highest population growth; over 25% in each case when job forecasts are extended to 2037.
- 4.26 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 18.2%, and the 'Migration-led 5yr – X' scenario also records a population increase of 18.2%.
- 4.27 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in 0.1% population decline to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, also results in population

decline at -0.6%.

- 4.28 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 4.0% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.29 Considering the average of the A and B alternatives, suggests a dwelling requirement of 424-428 resulting from the EEFM scenarios, with the 'SNPP-2010' and 'Migration-led' scenarios recording a range of 350-370 dwellings per year.
- 4.30 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 297-334 per year.

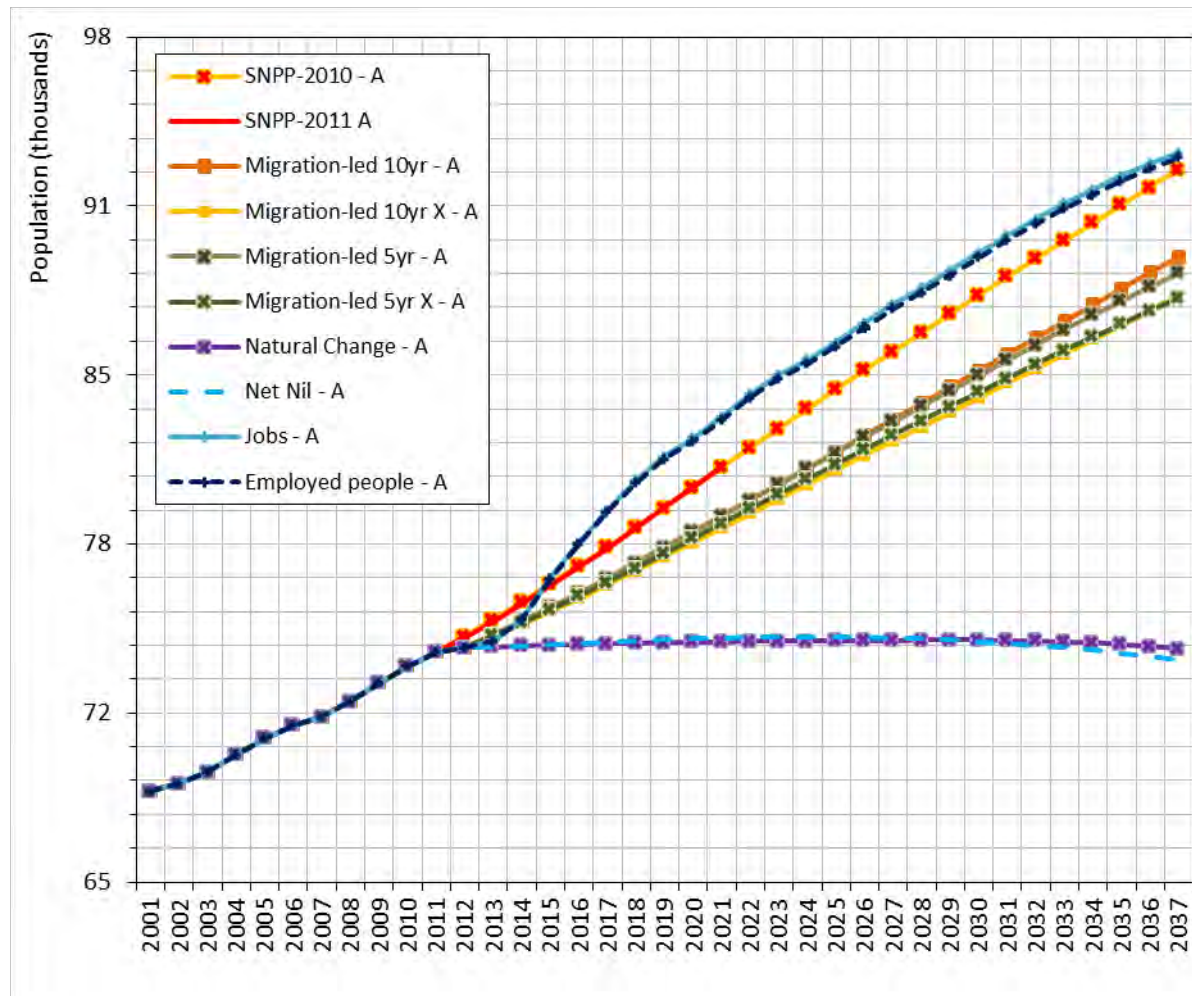
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	421	434	428
Employed people	418	430	424
SNPP-2010	363	377	370
Migration-led 5yr	342	358	350
Migration-led 5yr X	327	342	334
Migration-led 10yr	314	330	322
Migration-led 10yr X	289	305	297
Natural Change	88	109	98
Net Nil	70	76	73

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Brentwood

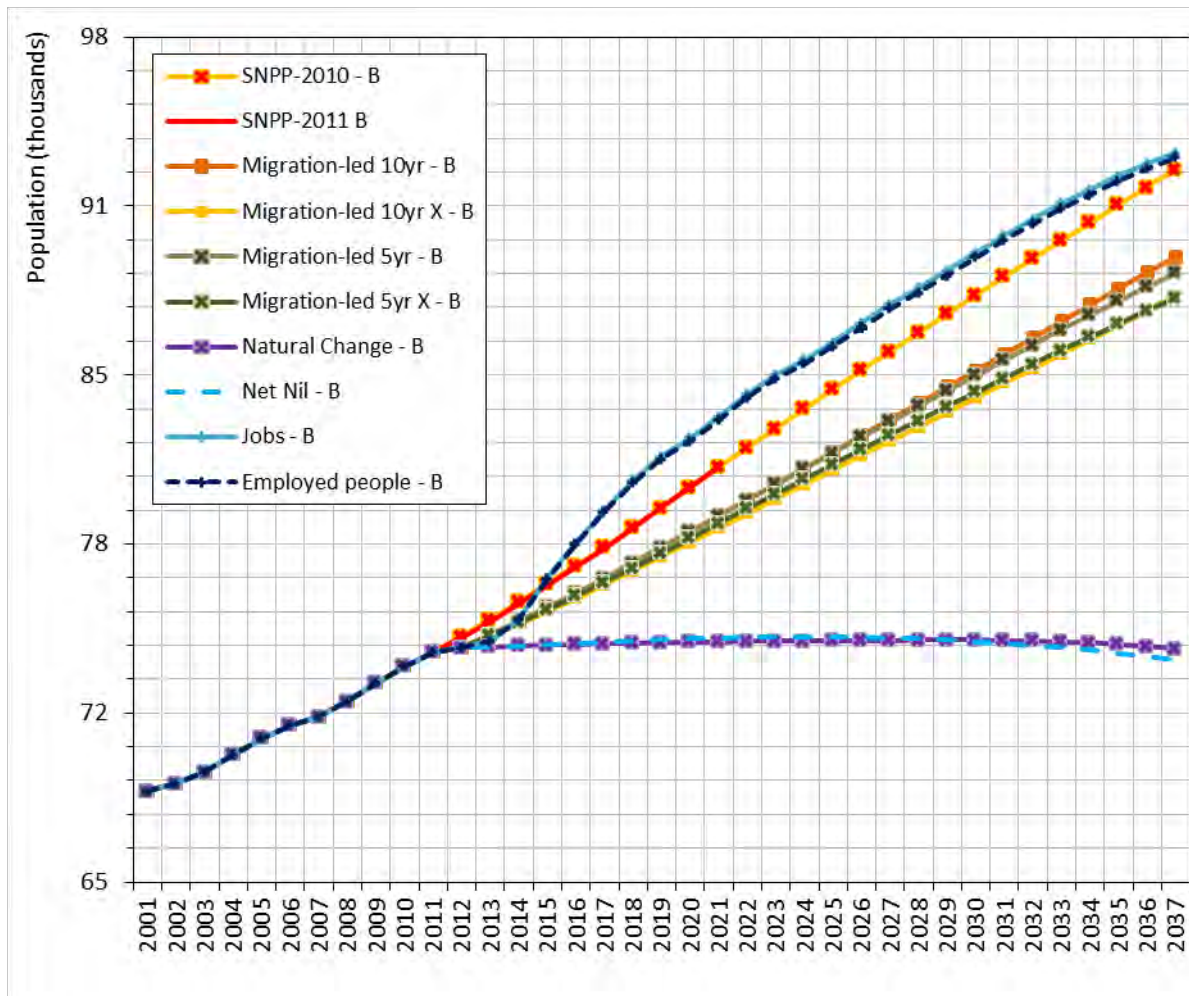
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	19,045	25.7%	10,069	32.6%	674	421	275
Employed people - A	18,850	25.5%	9,991	32.3%	668	418	271
SNPP-2010 - A	17,962	24.1%	8,675	28.1%	596	363	266
Migration-led 10yr - A	15,045	20.3%	7,498	24.2%	515	314	189
Migration-led 5yr - A	14,425	19.5%	8,183	26.5%	529	342	181
Migration-led 10yr X - A	13,501	18.2%	6,914	22.4%	461	289	158
Migration-led 5yr X - A	13,441	18.2%	7,808	25.2%	495	327	161
Natural Change - A	-60	-0.1%	2,091	6.8%	0	88	-141
Net Nil - A	-480	-0.6%	1,661	5.4%	0	70	-98

Brentwood

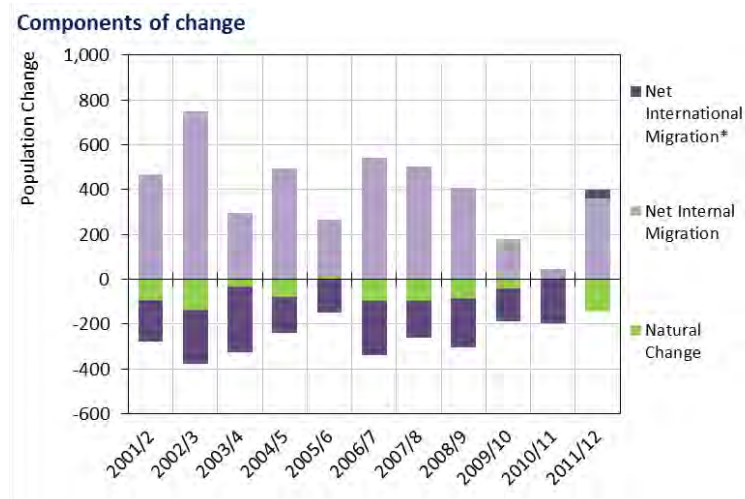
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	19,045	25.7%	10,359	33.5%	674	434	275
Employed people - B	18,850	25.5%	10,283	33.3%	668	430	271
SNPP-2010 - B	17,962	24.1%	9,019	29.2%	596	377	266
Migration-led 10yr - B	15,045	20.3%	7,876	25.5%	515	330	189
Migration-led 5yr - B	14,425	19.5%	8,547	27.6%	529	358	181
Migration-led 10yr X - B	13,501	18.2%	7,276	23.5%	461	305	158
Migration-led 5yr X - B	13,441	18.2%	8,160	26.4%	495	342	161
Natural Change - B	-60	-0.1%	2,599	8.4%	0	109	-141
Net Nil - B	-480	-0.6%	1,825	5.9%	0	76	-98

Castle Point – scenario summary

- 4.31 A net inflow from internal migration has been the dominant driver of population change since 2001, falling sharply in 2009-2011. Both natural change and net international migration are estimated to have had a negative impact upon growth throughout the 2001-2012 time period.



*Includes the UPC component of change

- 4.32 The 'SNPP-2010' scenario suggests 15.6% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces two population forecasts that are very different to the 'SNPP-2010', both suggesting a population decline. The 'Migration-led 5yr' scenario records a decline over the forecast period of -1.4%, with the 'Migration-led 10yr' scenario slightly higher at -0.9%.
- 4.33 In contrast to the 'Migration-led' scenarios, the EEFM 'Jobs' and 'Employed people' scenarios result in an estimated 13.3 & 13.4% population growth to 2037.
- 4.34 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 3.3%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 3.1%, reflecting the differential impact of the UPC component upon historical population change.
- 4.35 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a significant -4.3% population decline to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, results in an even

more significant decline at -7.7%.

- 4.36 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 31.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios). The relatively high differential reflects the ageing structure of the population, with internal and international migration having a balancing impact upon growth.
- 4.37 Considering the average of the A and B alternatives, suggests a dwelling requirement of 294-296 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting the highest growth at 317 per year. The 'Migration-led' scenarios record a range of just 90-110 dwellings per year, in contrast.
- 4.38 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 155-161 per year.

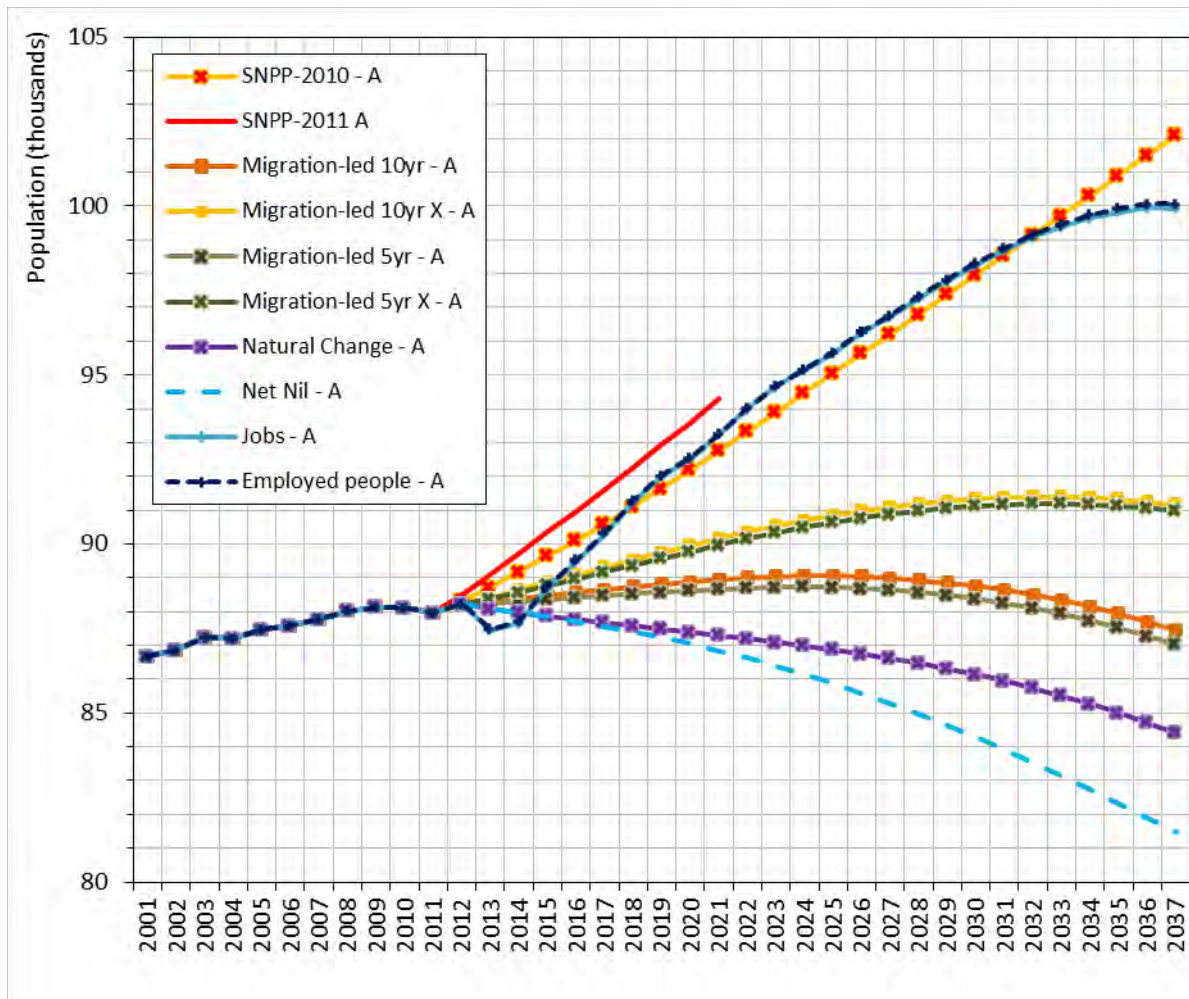
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
SNPP-2010	286	347	317
Employed people	269	323	296
Jobs	267	321	294
Migration-led 10yr X	135	188	161
Migration-led 5yr X	128	181	155
Migration-led 10yr	74	127	101
Migration-led 5yr	64	117	90
Natural Change	-16	36	10
Net Nil	-67	-11	-39

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Castle Point

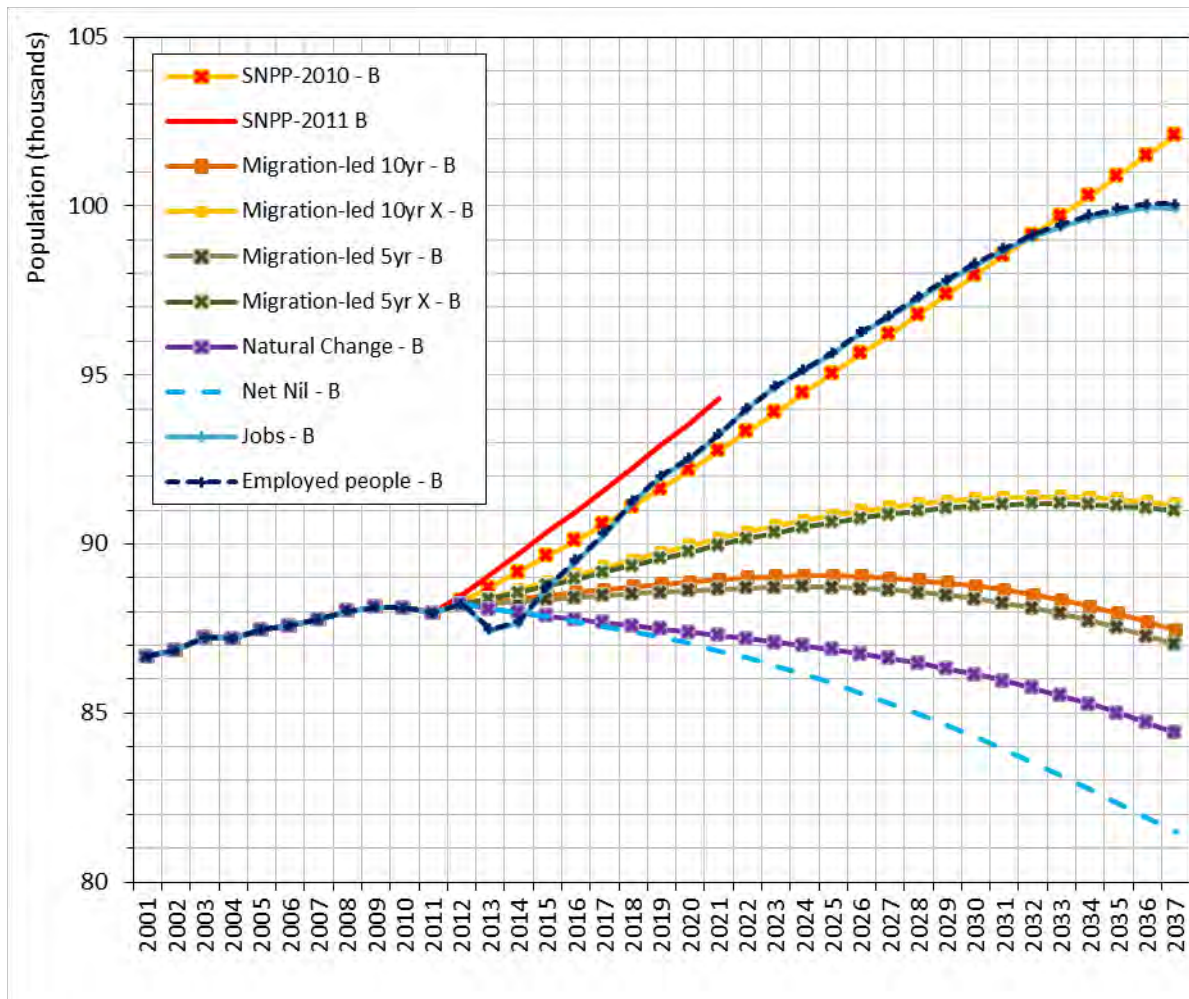
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - A	13,772	15.6%	6,926	19.1%	784	286	49
Employed people - A	11,851	13.4%	6,498	17.7%	680	269	-3
Jobs - A	11,721	13.3%	6,449	17.6%	675	267	-5
Migration-led 10yr X - A	2,942	3.3%	3,252	8.9%	397	135	-105
Migration-led 5yr X - A	2,765	3.1%	3,089	8.4%	356	128	-102
Migration-led 10yr - A	-771	-0.9%	1,791	4.9%	261	74	-150
Migration-led 5yr - A	-1,191	-1.4%	1,536	4.2%	211	64	-150
Natural Change - A	-3,799	-4.3%	-388	-1.1%	0	-16	-144
Net Nil - A	-6,752	-7.7%	-1,625	-4.4%	0	-67	-203

Castle Point

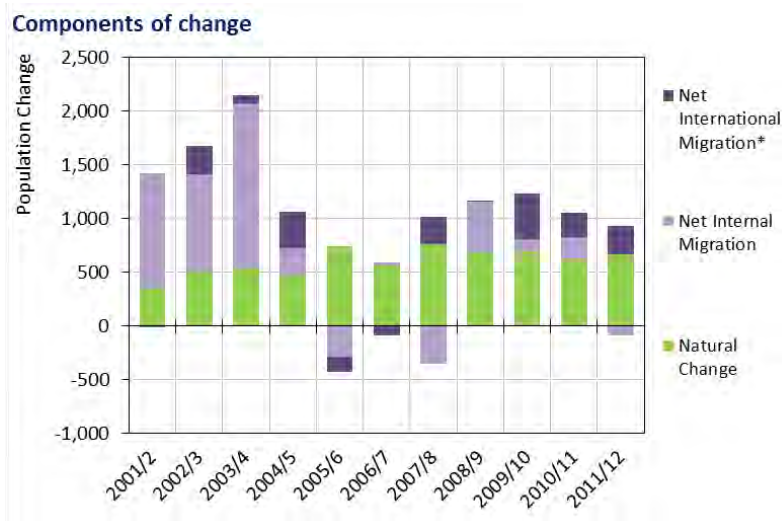
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - B	13,772	15.6%	8,382	23.1%	784	347	49
Employed people - B	11,851	13.4%	7,805	21.3%	680	323	-3
Jobs - B	11,721	13.3%	7,755	21.2%	675	321	-5
Migration-led 10yr X - B	2,942	3.3%	4,535	12.4%	397	188	-105
Migration-led 5yr X - B	2,765	3.1%	4,386	12.0%	356	181	-102
Migration-led 10yr - B	-771	-0.9%	3,074	8.4%	261	127	-150
Migration-led 5yr - B	-1,191	-1.4%	2,833	7.7%	211	117	-150
Natural Change - B	-3,799	-4.3%	872	2.4%	0	36	-144
Net Nil - B	-6,752	-7.7%	-278	-0.8%	0	-11	-203

Chelmsford – scenario summary

- 4.39 Natural change has been the most significant driver of population growth since 2001. Growth through internal migration was at its highest during 2001/02-2003/04 but its impact has been variable thereafter. International migration has generally had a positive impact upon annual population change.



*Includes the UPC component of change

- 4.40 The 'SNPP-2010' scenario suggests 17.4% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces two population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 5yr' scenario records a growth of 9.8% over the forecast period, with the 'Migration-led 10yr' scenario higher at 13.4%, reflecting the higher migration impacts in the early years of the decade.
- 4.41 The EEFM 'Jobs' and 'Employed people' scenarios imply a much larger population change, linked to substantial jobs growth. Population growth estimated by these scenarios is 36.9% - 38.2% over the forecast period.
- 4.42 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr - X' scenario records a growth of 11.6%, whereas the 'Migration-led 5yr - X' scenario records a population increase of 8.2%, reflecting the differential impact of the UPC component upon historical population change.

- 4.43 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in 4.5% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, results in higher growth at - 6.1%.
- 4.44 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 5.7% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.45 Considering the average of the A and B alternatives, suggests a dwelling requirement of 1,256-1,289 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting the highest growth at 716 per year. The 'Migration-led' scenarios record a range of 515-556 dwellings per year, in contrast.
- 4.46 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 474-510 per year.

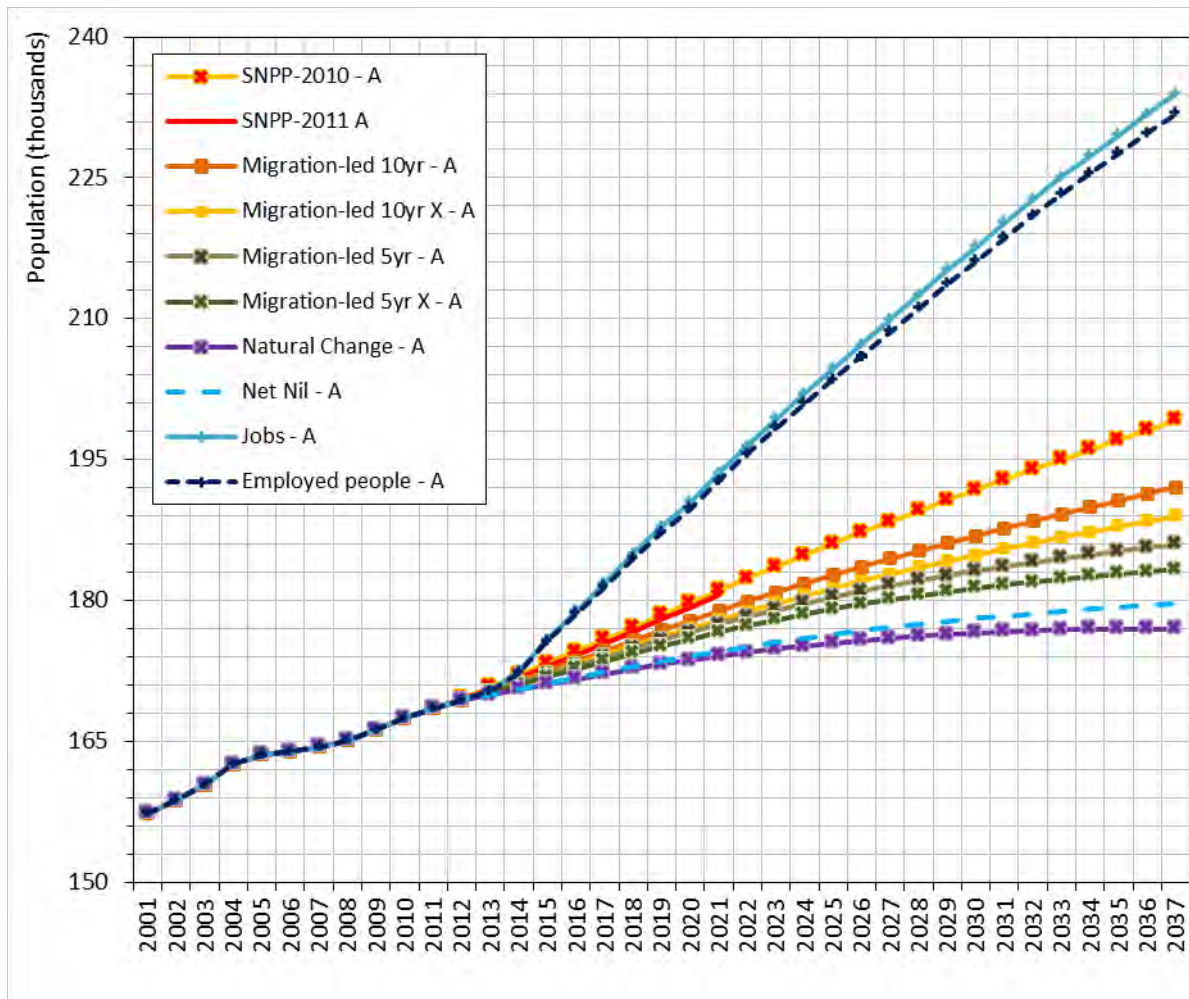
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	1,264	1,314	1,289
Employed people	1,231	1,280	1,256
SNPP-2010	696	736	716
Migration-led 10yr	534	578	556
Migration-led 5yr	497	533	515
Migration-led 10yr X	489	531	510
Migration-led 5yr X	456	491	474
Natural Change	387	424	406
Net Nil	347	383	365

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Chelmsford

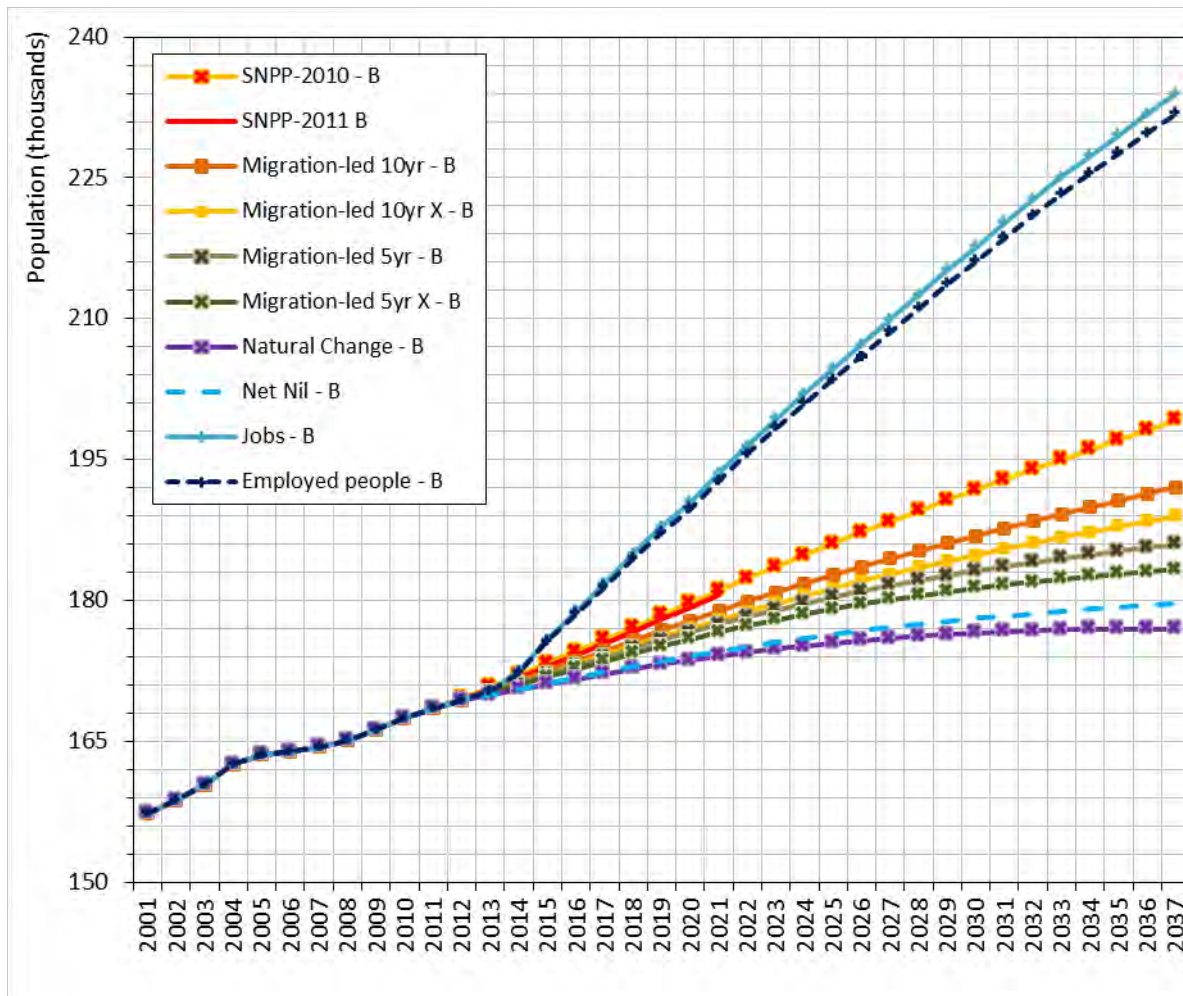
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	64,625	38.2%	30,906	43.9%	1,910	1,264	928
Employed people - A	62,533	36.9%	30,092	42.7%	1,842	1,231	886
SNPP-2010 - A	29,586	17.4%	17,019	24.2%	686	696	350
Migration-led 10yr - A	22,704	13.4%	13,065	18.6%	442	534	125
Migration-led 10yr X - A	19,666	11.6%	11,947	17.0%	342	489	62
Migration-led 5yr - A	16,597	9.8%	12,149	17.3%	320	497	-44
Migration-led 5yr X - A	13,931	8.2%	11,152	15.8%	231	456	-98
Net Nil - A	10,301	6.1%	8,484	12.1%	0	347	-36
Natural Change - A	7,581	4.5%	9,466	13.4%	0	387	-207

Chelmsford

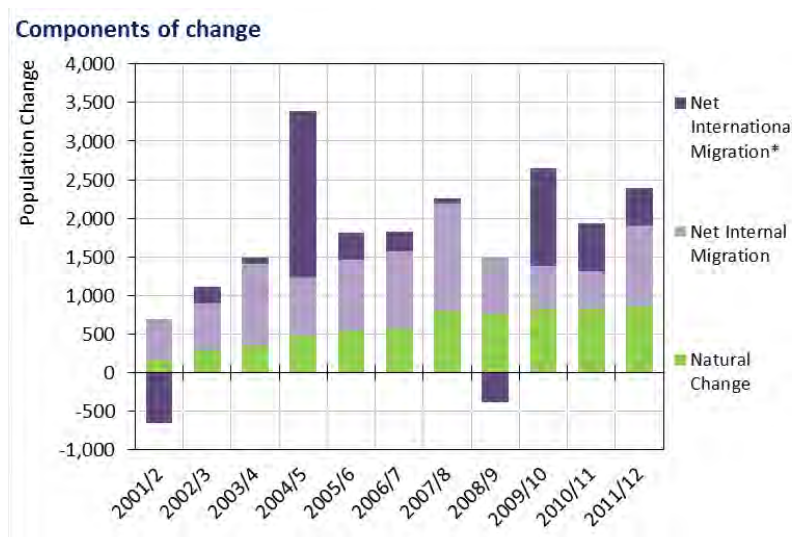
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	64,625	38.2%	32,118	45.5%	1,910	1,314	928
Employed people - B	62,533	36.9%	31,294	44.4%	1,842	1,280	886
SNPP-2010 - B	29,586	17.4%	17,994	25.5%	686	736	350
Migration-led 10yr - B	22,704	13.4%	14,128	20.0%	442	578	125
Migration-led 10yr X - B	19,666	11.6%	12,969	18.4%	342	531	62
Migration-led 5yr - B	16,597	9.8%	13,040	18.5%	320	533	-44
Migration-led 5yr X - B	13,931	8.2%	12,007	17.0%	231	491	-98
Net Nil - B	10,301	6.1%	9,352	13.3%	0	383	-36
Natural Change - B	7,581	4.5%	10,376	14.7%	0	424	-207

Colchester – scenario summary

- 4.47 Natural change has become a progressively more significant driver of population growth since 2001. Growth through internal migration has been consistently positive with a peak net inflow during 2007/08. International migration has had a variable impact upon annual population change but significantly positive in the last three years of the historical time-series.



*Includes the UPC component of change

- 4.48 The 'SNPP-2010' scenario suggests 31.6% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are higher and lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 35% over the forecast period, with significant influence exerted by the very high net international migration estimate in 2004/05. The 'Migration-led 5yr' scenario records only slightly lower growth at 30.5%, reflecting the higher migration impacts in the later years of the decade.
- 4.49 The EEFM 'Jobs' and 'Employed people' scenarios imply a smaller population change. Although projected jobs growth is relatively high, the underlying high migration assumptions accommodate the anticipated change in employment totals. Population growth estimated by these scenarios is 25.8% - 26.9% over the forecast period.
- 4.50 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 41.9%, whereas

the 'Migration-led 5yr – X' scenario records a population increase of 36.4%, reflecting the differential impact of the UPC component upon historical population change.

- 4.51 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in 3.4% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, results in higher growth at - 7.3%.
- 4.52 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 3.4% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.53 Considering the average of the A and B alternatives, suggests a dwelling requirement of 929-963 per year resulting from the EEFM scenarios, with the 'SNPP-2010' and 'Migration-led' scenarios recording a higher range of 1,063 – 1,167 dwellings per year, in contrast.
- 4.54 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 1,231-1,367 per year.

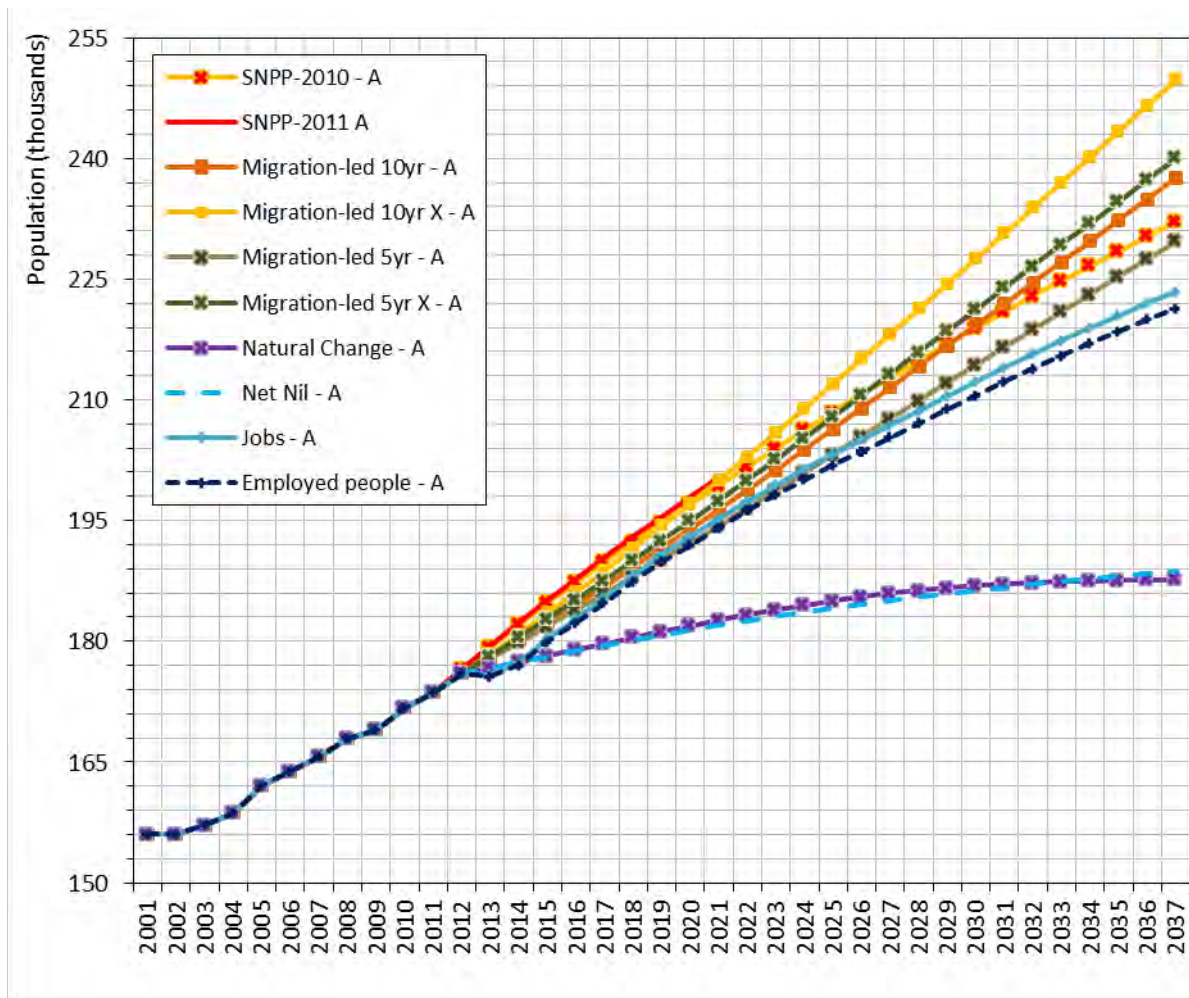
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 10yr X	1,344	1,390	1,367
Migration-led 5yr X	1,209	1,254	1,231
Migration-led 10yr	1,147	1,187	1,167
SNPP-2010	1,142	1,170	1,156
Migration-led 5yr	1,043	1,083	1,063
Jobs	946	980	963
Employed people	912	945	929
Natural Change	484	490	487
Net Nil	332	367	349

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Colchester

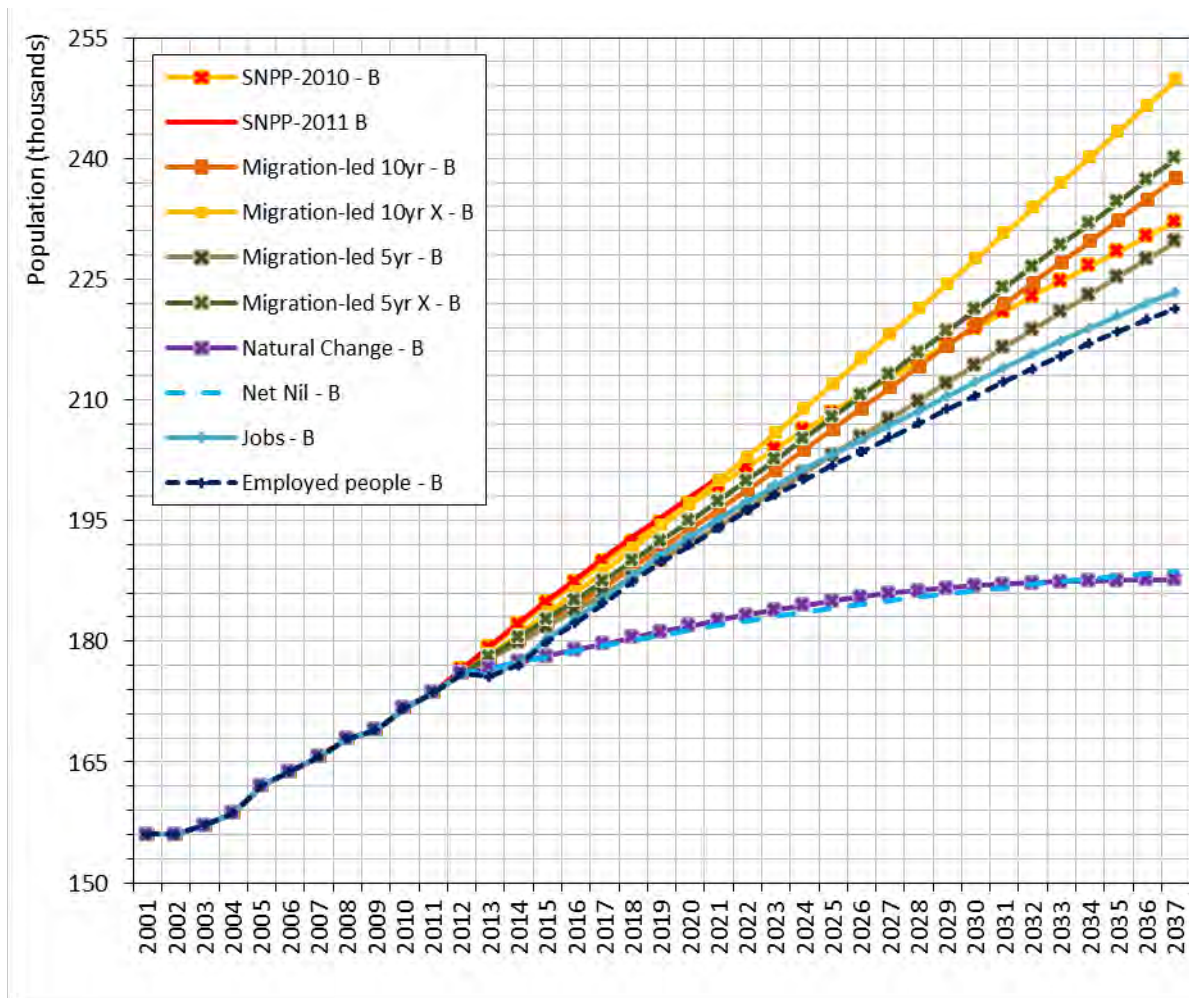
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr X - A	73,786	41.9%	32,298	44.3%	1,906	1,344	1,235
Migration-led 5yr X - A	64,068	36.4%	29,053	39.9%	1,668	1,209	1,059
Migration-led 10yr - A	61,573	35.0%	27,551	37.8%	1,513	1,147	967
SNPP-2010 - A	55,717	31.6%	27,448	37.6%	1,308	1,142	882
Migration-led 5yr - A	53,727	30.5%	25,057	34.4%	1,334	1,043	833
Jobs - A	47,425	26.9%	22,727	31.2%	1,105	946	697
Employed people - A	45,347	25.8%	21,902	30.1%	1,041	912	654
Net Nil - A	12,788	7.3%	7,984	11.0%	0	332	-121
Natural Change - A	11,670	6.6%	11,617	15.9%	0	484	-32

Colchester

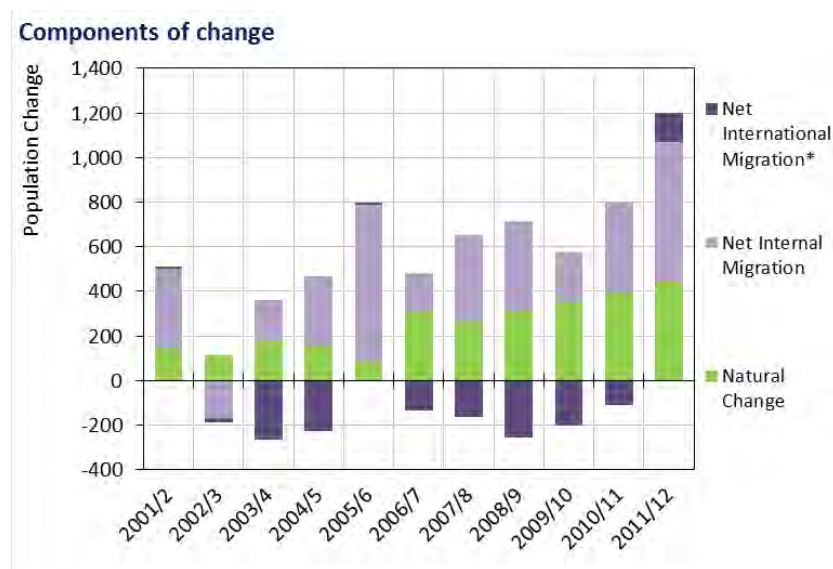
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr X - B	73,786	41.9%	33,393	45.8%	1,906	1,390	1,235
Migration-led 5yr X - B	64,068	36.4%	30,118	41.3%	1,668	1,254	1,059
Migration-led 10yr - B	61,573	35.0%	28,528	39.2%	1,513	1,187	967
SNPP-2010 - B	55,717	31.6%	28,113	38.5%	1,308	1,170	882
Migration-led 5yr - B	53,727	30.5%	26,014	35.7%	1,334	1,083	833
Jobs - B	47,425	26.9%	23,542	32.3%	1,105	980	697
Employed people - B	45,347	25.8%	22,716	31.2%	1,041	945	654
Net Nil - B	12,788	7.3%	8,809	12.1%	0	367	-121
Natural Change - B	11,670	6.6%	11,784	16.2%	0	490	-32

Epping Forest – scenario summary

- 4.55 Natural change has become a progressively more significant driver of population growth since 2001. Growth through internal migration has been consistently positive since 2003/04, with a high net inflow recorded in the latest year of the time-series. International migration has had a small negative impact upon annual population change, with the exception of the latest year where the estimate suggests a small positive impact.



*Includes the UPC component of change

- 4.56 The 'SNPP-2010' scenario suggests 26.2% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 12.1%, whereas the 'Migration-led 5yr' scenario records a higher 14.7%, reflecting slightly higher migration impacts in the later years of the last decade.
- 4.57 The EEFM 'Jobs' and 'Employed people' scenarios imply a higher population increases linked to employment growth. Population growth estimated by these scenarios is 28.1%-30.9% over the forecast period.
- 4.58 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 16.2%, whereas

the 'Migration-led 5yr – X' scenario records a population increase of 19.4%, reflecting the differential impact of the UPC component upon historical population change.

- 4.59 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in 6.9% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, results in higher growth at - 5.7%.
- 4.60 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 6.4% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.61 Considering the average of the A and B alternatives, suggests a dwelling requirement of 729-784 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting 732 dwellings per year. In contrast, the 'Migration-led' scenarios recorded a lower range of 377-457 dwellings per year.
- 4.62 The 'X' scenarios suggest much higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 456-547 per year.

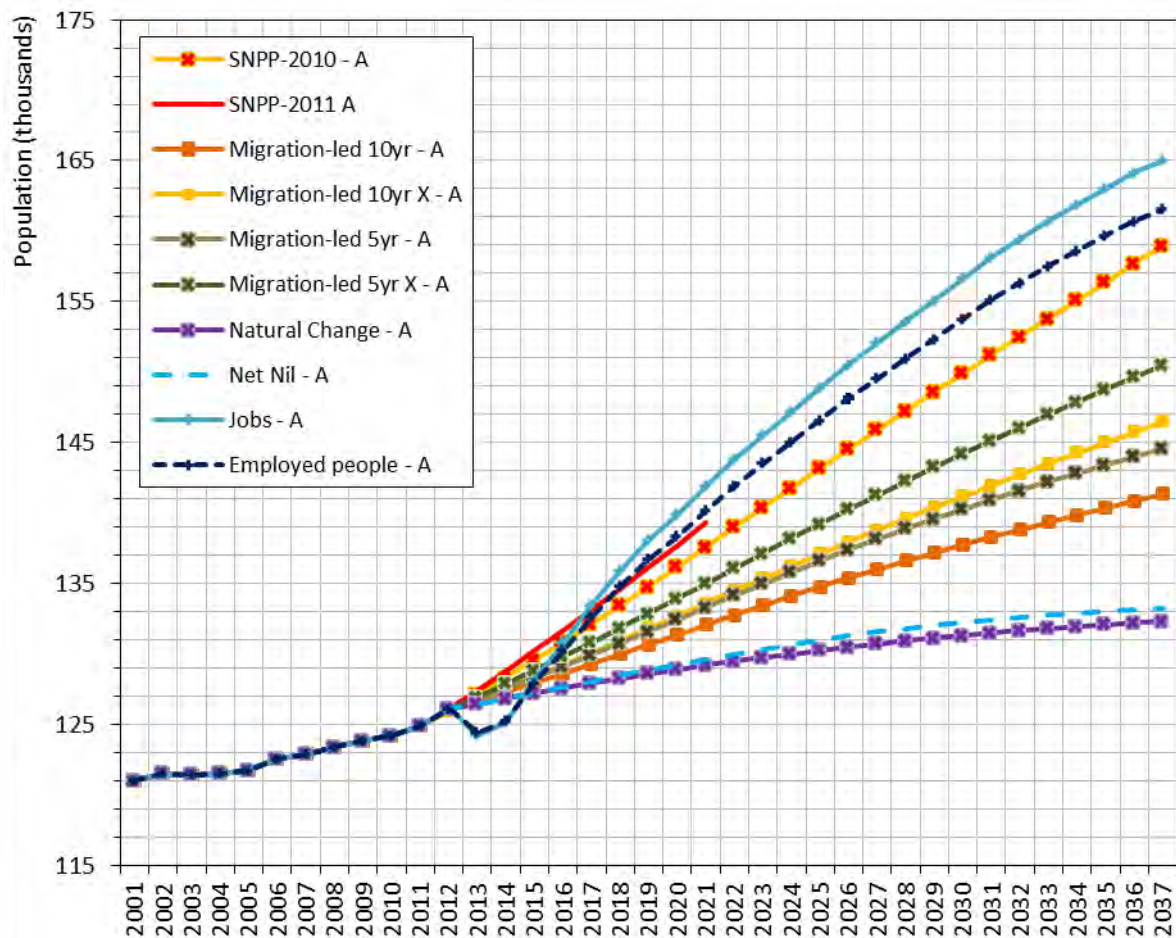
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	764	805	784
SNPP-2010	714	751	732
Employed people	708	749	729
Migration-led 5yr X	528	566	547
Migration-led 5yr	440	474	457
Migration-led 10yr X	436	477	456
Migration-led 10yr	358	396	377
Net Nil	257	284	271
Natural Change	212	243	227

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Epping Forest

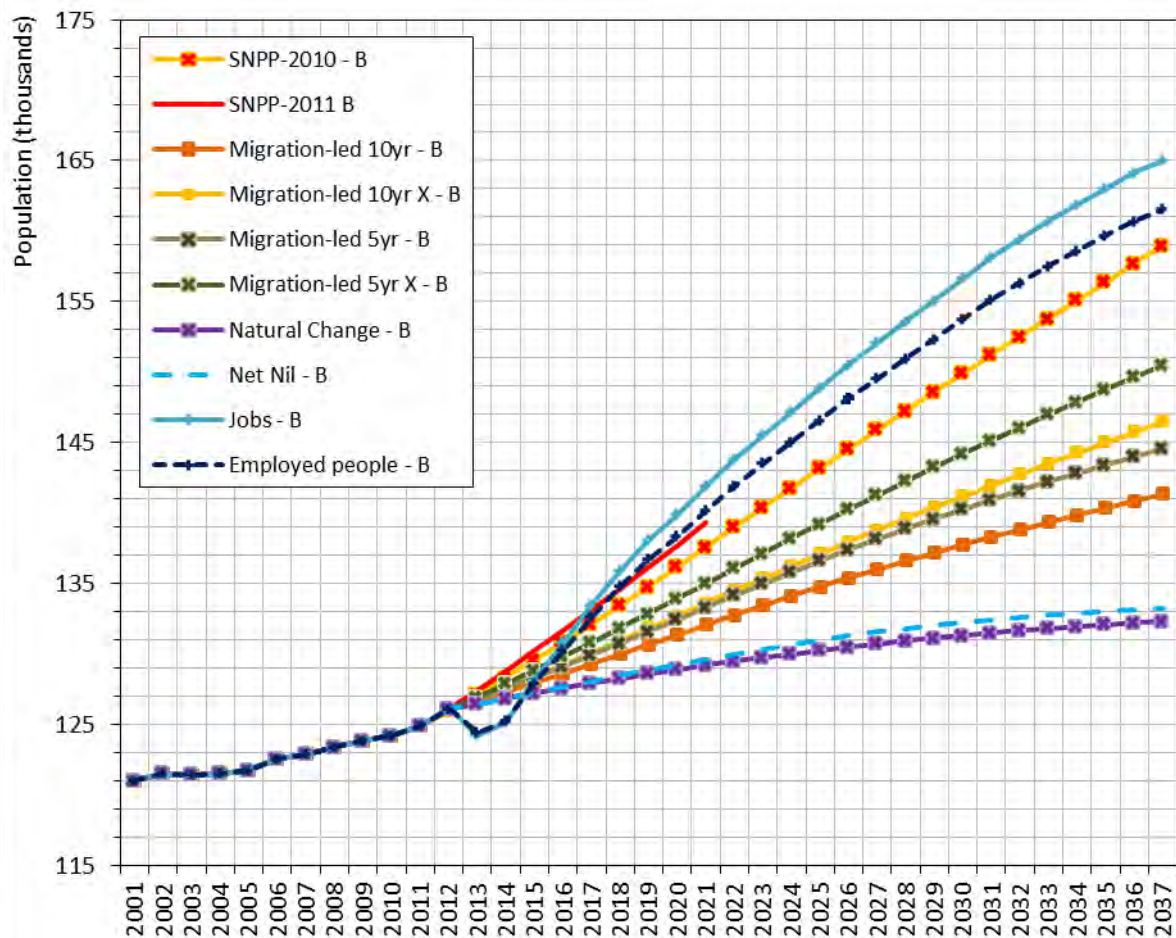
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	38,954	30.9%	18,241	34.7%	1,012	764	418
Employed people - A	35,458	28.1%	16,918	32.2%	903	708	364
SNPP-2010 - A	33,024	26.2%	17,055	32.6%	973	714	421
Migration-led 5yr X - A	24,401	19.4%	12,602	24.0%	553	528	196
Migration-led 10yr X - A	20,389	16.2%	10,405	19.8%	398	436	151
Migration-led 5yr - A	18,493	14.7%	10,510	20.0%	364	440	107
Migration-led 10yr - A	15,266	12.1%	8,564	16.3%	232	358	73
Net Nil - A	7,134	5.7%	6,135	11.7%	0	257	-17
Natural Change - A	6,185	4.9%	5,068	9.6%	0	212	-116

Epping Forest

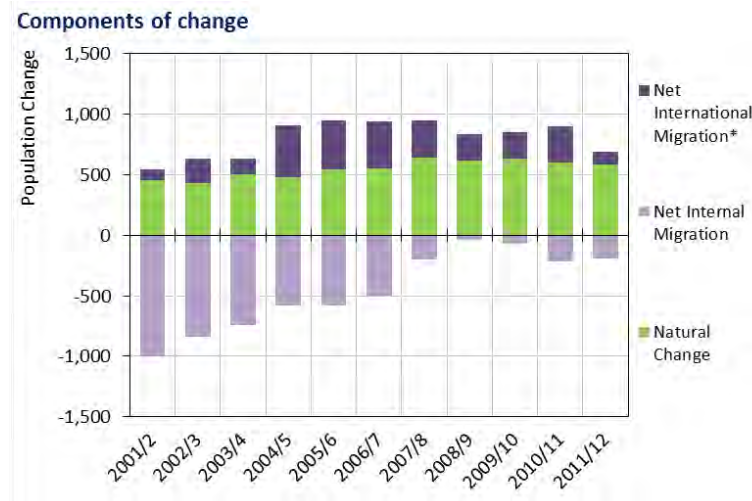
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	38,954	30.9%	19,240	36.6%	1,012	805	418
Employed people - B	35,458	28.1%	17,892	34.0%	903	749	364
SNPP-2010 - B	33,024	26.2%	17,932	34.2%	973	751	421
Migration-led 5yr X - B	24,401	19.4%	13,528	25.7%	553	566	196
Migration-led 10yr X - B	20,389	16.2%	11,392	21.7%	398	477	151
Migration-led 5yr - B	18,493	14.7%	11,330	21.5%	364	474	107
Migration-led 10yr - B	15,266	12.1%	9,461	18.0%	232	396	73
Net Nil - B	7,134	5.7%	6,793	12.9%	0	284	-17
Natural Change - B	6,185	4.9%	5,799	11.0%	0	243	-116

Harlow – scenario summary

- 4.63 Natural change has been a consistent driver of population growth since 2001. Internal migration has had a negative impact upon growth throughout the period although the net outflow has reduced in the last five years. International migration has had a positive impact upon annual population change, in each year since 2001/02.



*Includes the UPC component of change

- 4.64 The 'SNPP-2010' scenario suggests 21.3% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010' with large differences depending upon the choice of assumptions. The 'Migration-led 10yr' scenario records a growth of 12.9%, whereas the 'Migration-led 5yr' scenario records a higher 19.5%, reflecting higher net migration impacts in the later years of the last decade.
- 4.65 The EEFM 'Jobs' and 'Employed people' scenarios imply a population increase between the two 'Migration-led' alternatives. Population growth estimated by these scenarios is 17.2%-18.9% over the forecast period.
- 4.66 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 11.3%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 18.8%, reflecting the

differential impact of the UPC component upon historical population change.

- 4.67 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a relatively high 12.7% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces an even higher growth outcome, with a 21.4% increase over the forecast period.
- 4.68 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 5.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.69 Considering the average of the A and B alternatives, suggests a dwelling requirement of 301-324 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting the highest growth at 370 dwellings per year. The two 'Migration-led' scenarios record a relatively wide range of outcomes, 240-333 dwellings per year.
- 4.70 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 218-324 per year.

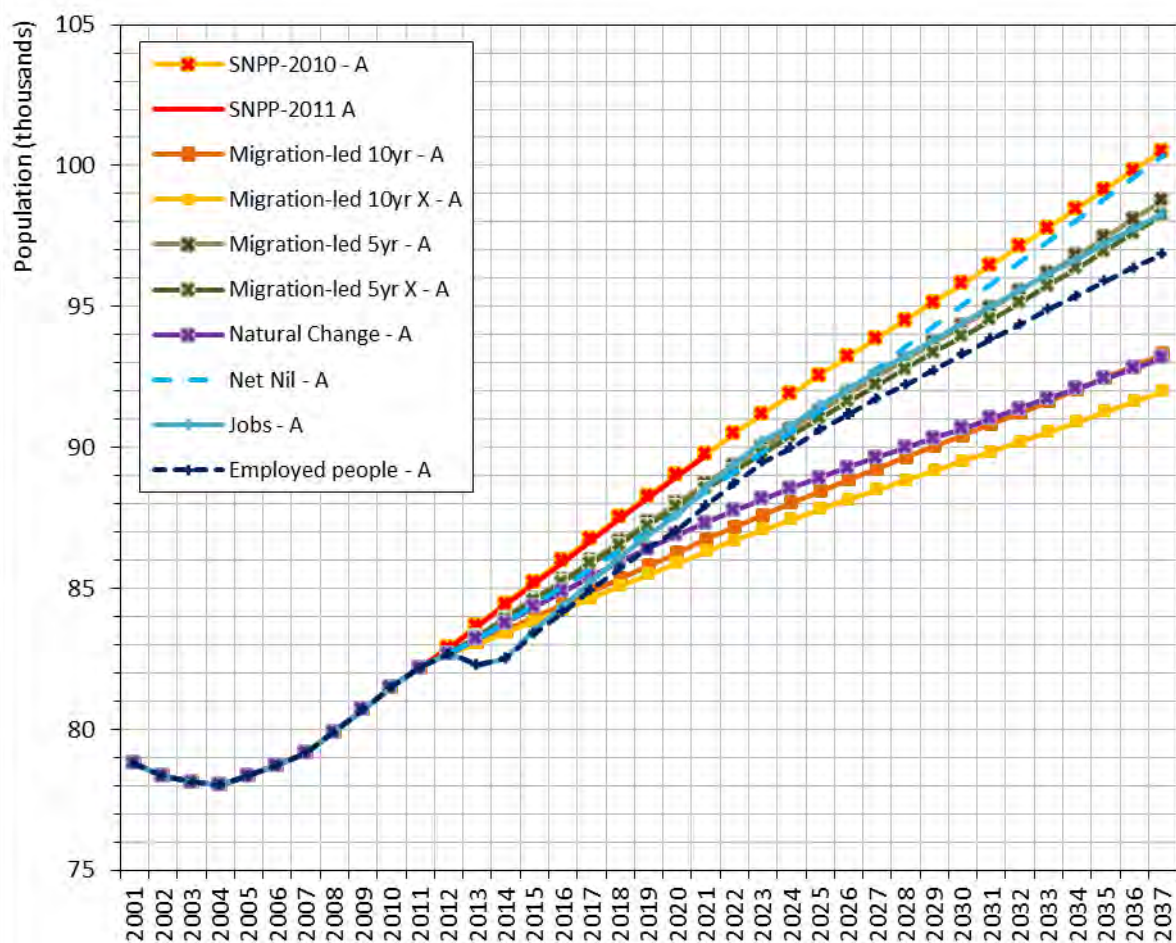
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
SNPP-2010	361	379	370
Migration-led 5yr	325	341	333
Jobs	317	332	324
Migration-led 5yr X	317	332	324
Net Nil	307	327	317
Employed people	294	308	301
Natural Change	263	271	267
Migration-led 10yr	232	247	240
Migration-led 10yr X	210	225	218

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Harlow

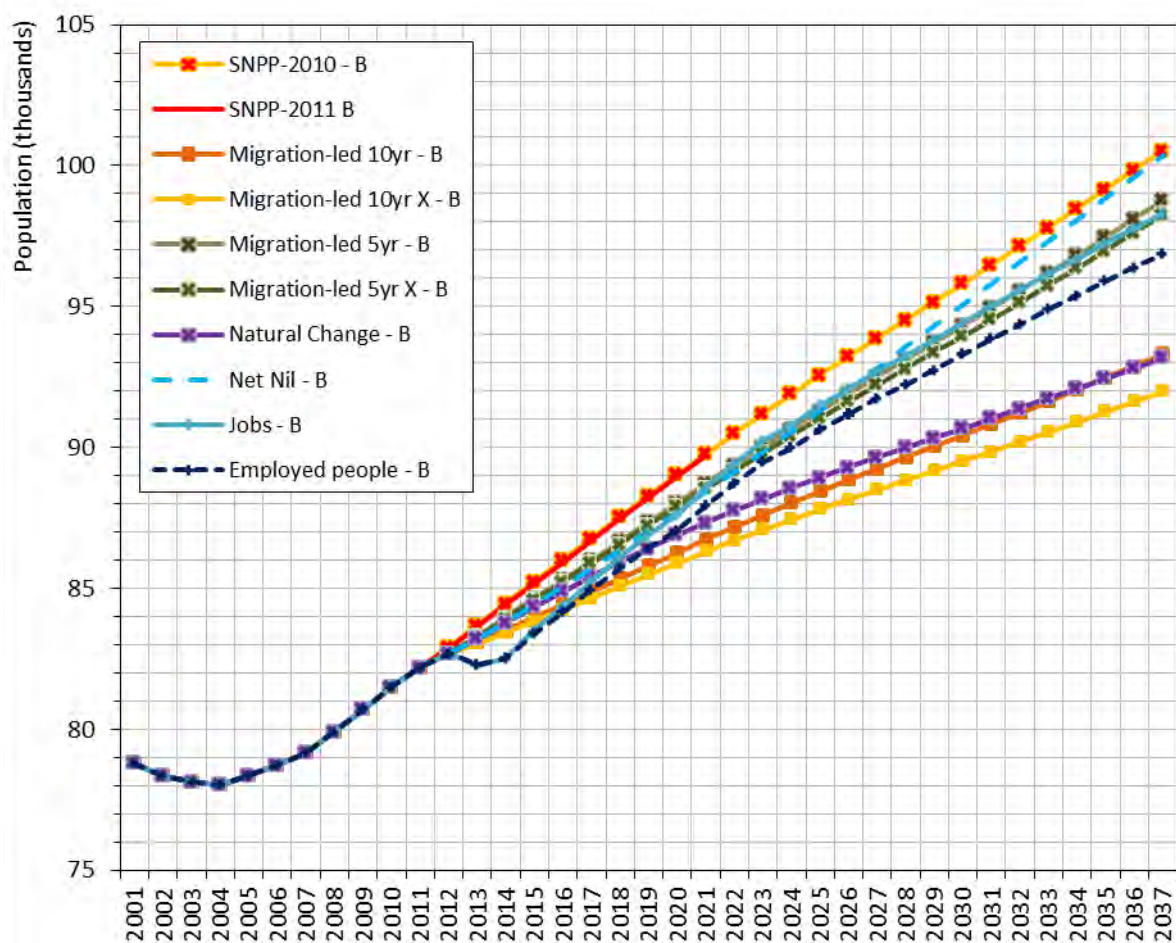
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Net Nil - A	17,703	21.4%	7,436	21.3%	0	307	262
SNPP-2010 - A	17,624	21.3%	8,757	25.1%	23	361	292
Migration-led 5yr - A	16,106	19.5%	7,884	22.6%	48	325	219
Jobs - A	15,618	18.9%	7,683	22.0%	30	317	206
Migration-led 5yr X - A	15,571	18.8%	7,673	22.0%	30	317	209
Employed people - A	14,196	17.2%	7,129	20.4%	-13	294	178
Migration-led 10yr - A	10,647	12.9%	5,623	16.1%	-178	232	128
Natural Change - A	10,505	12.7%	6,372	18.3%	0	263	91
Migration-led 10yr X - A	9,324	11.3%	5,098	14.6%	-220	210	101

Harlow

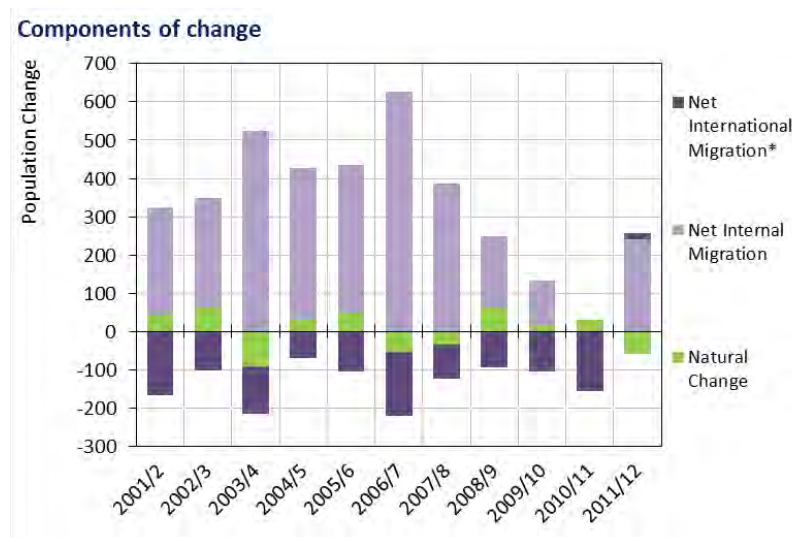
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Net Nil - B	17,703	21.4%	7,921	22.7%	0	327	262
SNPP-2010 - B	17,624	21.3%	9,178	26.3%	23	379	292
Migration-led 5yr - B	16,106	19.5%	8,254	23.6%	48	341	219
Jobs - B	15,618	18.9%	8,039	23.0%	30	332	206
Migration-led 5yr X - B	15,571	18.8%	8,039	23.0%	30	332	209
Employed people - B	14,196	17.2%	7,475	21.4%	-13	308	178
Migration-led 10yr - B	10,647	12.9%	5,986	17.1%	-178	247	128
Natural Change - B	10,505	12.7%	6,559	18.8%	0	271	91
Migration-led 10yr X - B	9,324	11.3%	5,449	15.6%	-220	225	101

Maldon – scenario summary

- 4.71 Population growth since 2001/02 has been dominated by the influence of internal migration, with a strong net growth to 2006/07 reducing thereafter. Natural change has varied in its importance as a component of change from a small negative to a small positive influence. International migration has had a negative impact upon annual population change, in each year apart from 2011/12 when a small net growth was estimated.



*Includes the UPC component of change

- 4.72 The 'SNPP-2010' scenario suggests 17.8% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are very different to the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 1.1%, whereas the 'Migration-led 5yr' scenario records a population decline of -3.6%, reflecting the negative net migration impacts in the later years of the last decade.
- 4.73 The EEFM 'Jobs' and 'Employed people' scenarios imply a more substantial population increase linked to employment growth. Population growth estimated by these scenarios is 28.5%-29.8% over the forecast period.
- 4.74 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 6.5%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 2.2%, reflecting the

differential impact of the UPC component upon historical population change.

- 4.75 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a -3.7% population decline to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a greater decline, with a -9.2% decrease over the forecast period.
- 4.76 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 21.3% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.77 Considering the average of the A and B alternatives, suggests a dwelling requirement of 406-419 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 267 dwellings per year. The two 'Migration-led' scenarios record a lower range of outcomes, 70-109 dwellings per year.
- 4.78 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 129-163 per year.

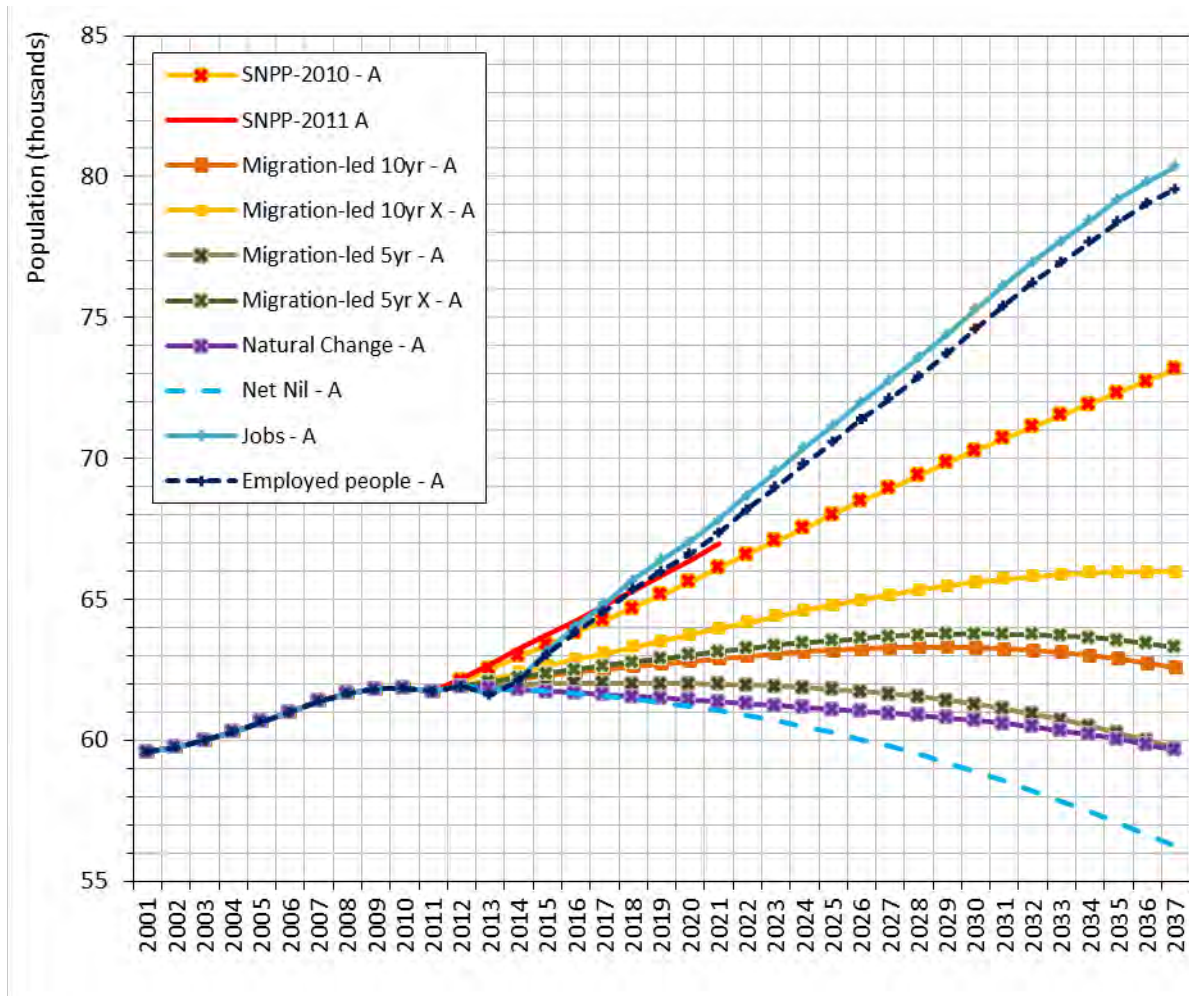
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	395	443	419
Employed people	382	430	406
SNPP-2010	248	285	267
Migration-led 10yr X	142	185	163
Migration-led 5yr X	108	150	129
Migration-led 10yr	88	130	109
Migration-led 5yr	49	90	70
Natural Change	-28	14	-7
Net Nil	-37	-6	-21

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Maldon

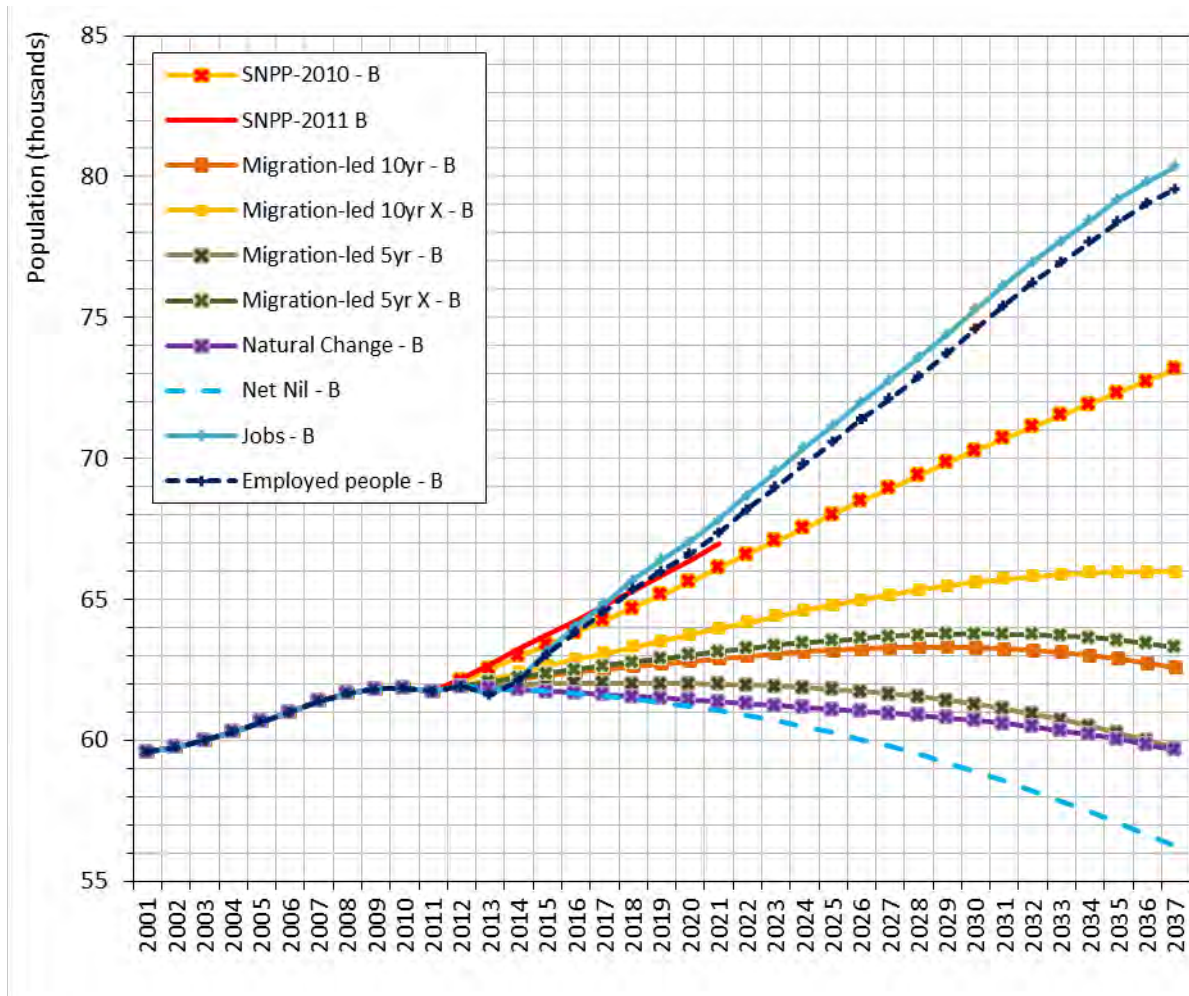
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	18,449	29.8%	9,370	36.0%	913	395	100
Employed people - A	17,648	28.5%	9,054	34.8%	884	382	88
SNPP-2010 - A	11,054	17.8%	5,890	22.8%	631	248	68
Migration-led 10yr X - A	4,039	6.5%	3,359	12.9%	372	142	-103
Migration-led 5yr X - A	1,383	2.2%	2,568	9.9%	273	108	-133
Migration-led 10yr - A	651	1.1%	2,085	8.0%	252	88	-153
Migration-led 5yr - A	-2,223	-3.6%	1,165	4.5%	143	49	-187
Natural Change - A	-2,269	-3.7%	-667	-2.6%	0	-28	-146
Net Nil - A	-5,679	-9.2%	-877	-3.4%	0	-37	-177

Maldon

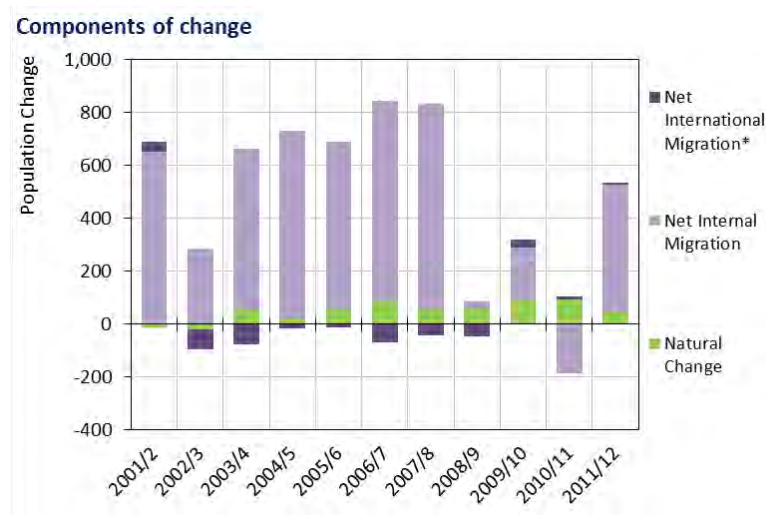
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	18,449	29.8%	10,508	40.3%	913	443	100
Employed people - B	17,648	28.5%	10,190	39.1%	884	430	88
SNPP-2010 - B	11,054	17.8%	6,760	26.2%	631	285	68
Migration-led 10yr X - B	4,039	6.5%	4,379	16.8%	372	185	-103
Migration-led 5yr X - B	1,383	2.2%	3,566	13.7%	273	150	-133
Migration-led 10yr - B	651	1.1%	3,084	11.8%	252	130	-153
Migration-led 5yr - B	-2,223	-3.6%	2,143	8.2%	143	90	-187
Natural Change - B	-2,269	-3.7%	338	1.3%	0	14	-146
Net Nil - B	-5,679	-9.2%	-140	-0.5%	0	-6	-177

Rochford – scenario summary

- 4.79 Population growth has been dominated by the influence of internal migration, but with a strong net growth to 2007/08 that reduced significantly thereafter, recovering in 2011/12. Natural change has had a small but positive influence upon annual population change. In contrast, international migration has generally had a small negative impact upon growth since 2001/02.



*Includes the UPC component of change

- 4.80 The 'SNPP-2010' scenario suggests 19.5% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are very different to the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 11.8%, whereas the 'Migration-led 5yr' scenario records a population change of 7.7%, reflecting the reduced net migration impacts in the later years of the last decade.
- 4.81 The EEFM 'Jobs' and 'Employed people' scenarios imply a higher population increase linked to employment growth. Population growth estimated by these scenarios is 20.2%-20.8% over the forecast period.
- 4.82 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 11.2%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 7.4%, reflecting the differential impact of the UPC component upon historical population change.

- 4.83 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 0.2% population increase to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a population decline, with a -0.9% decrease over the forecast period.
- 4.84 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 32.5% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.85 Considering the average of the A and B alternatives, suggests a dwelling requirement of 346-355 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 331 dwellings per year. The two 'Migration-led' scenarios record a lower range of outcomes, 192-254 dwellings per year.
- 4.86 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 187-246 per year.

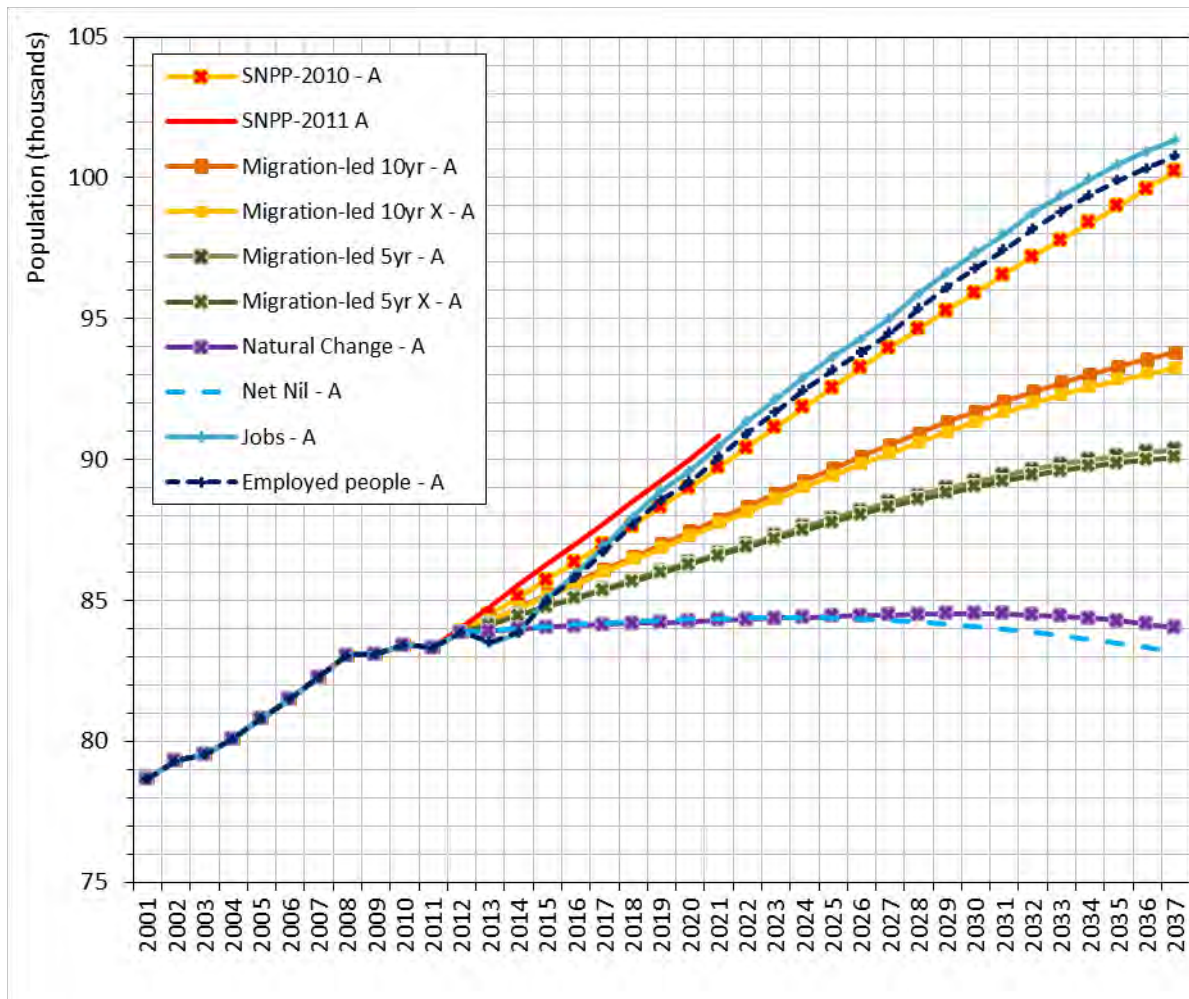
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	316	394	355
Employed people	307	386	346
SNPP-2010	298	365	331
Migration-led 10yr	215	294	254
Migration-led 10yr X	206	285	246
Migration-led 5yr	153	230	192
Migration-led 5yr X	149	226	187
Natural Change	47	131	89
Net Nil	36	102	69

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Rochford

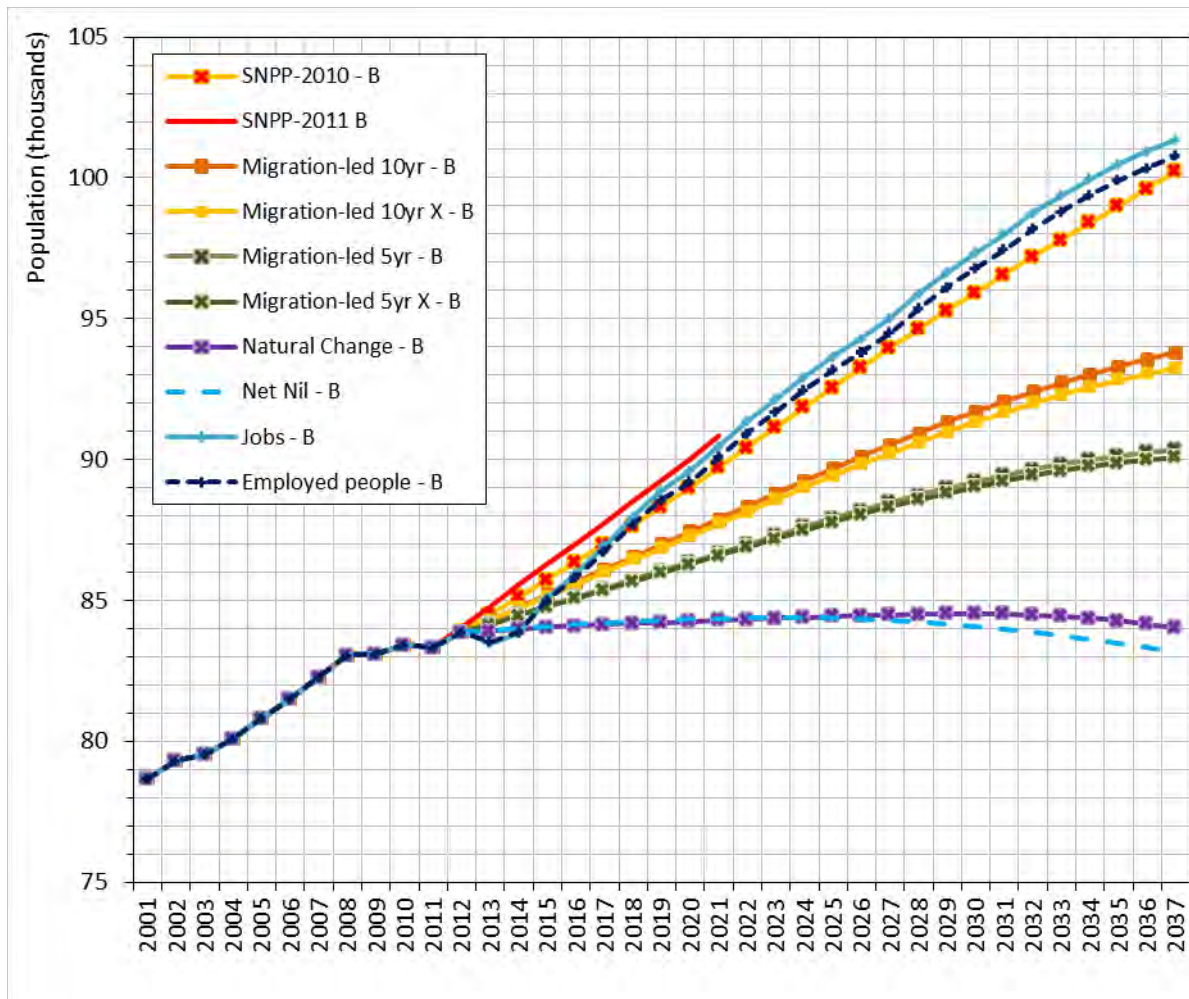
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	17,485	20.8%	7,693	22.7%	622	316	51
Employed people - A	16,908	20.2%	7,485	22.1%	604	307	44
SNPP-2010 - A	16,326	19.5%	7,259	21.7%	636	298	114
Migration-led 10yr - A	9,919	11.8%	5,231	15.4%	389	215	-25
Migration-led 10yr X - A	9,382	11.2%	5,030	14.9%	370	206	-32
Migration-led 5yr - A	6,485	7.7%	3,729	11.0%	251	153	-86
Migration-led 5yr X - A	6,204	7.4%	3,625	10.7%	241	149	-90
Natural Change - A	163	0.2%	1,140	3.4%	0	47	-142
Net Nil - A	-720	-0.9%	888	2.6%	0	36	-117

Rochford

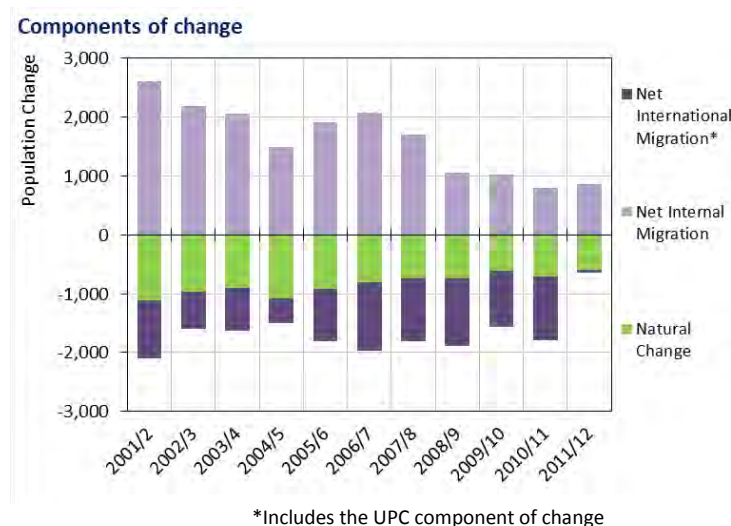
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	17,485	20.8%	9,600	28.3%	622	394	51
Employed people - B	16,908	20.2%	9,393	27.7%	604	386	44
SNPP-2010 - B	16,326	19.5%	8,883	26.5%	636	365	114
Migration-led 10yr - B	9,919	11.8%	7,155	21.1%	389	294	-25
Migration-led 10yr X - B	9,382	11.2%	6,949	20.5%	370	285	-32
Migration-led 5yr - B	6,485	7.7%	5,604	16.5%	251	230	-86
Migration-led 5yr X - B	6,204	7.4%	5,498	16.2%	241	226	-90
Natural Change - B	163	0.2%	3,201	9.4%	0	131	-142
Net Nil - B	-720	-0.9%	2,495	7.4%	0	102	-117

Tendring – scenario summary

- 4.87 Tendring’s population has been subject to a very significant downward adjustment as a result of the 2011 Census count. This makes the interpretation of the historical components of change and the derivation of forecast assumptions a more challenging proposition. The 2011 Census suggested a population total that was very similar to its 2011 total, effectively no growth in the intervening years, although with potential issues resulting from the 2001 Census count. The resulting historical components of change suggest that a consistent growth through positive net internal migration have been balanced by a negative impact from natural change and international migration.



- 4.88 The ‘SNPP-2010’ scenario suggests 26.6% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are very different to the ‘SNPP-2010’. The ‘Migration-led 10yr’ scenario records a growth of just 2.0%, whereas the ‘Migration-led 5yr’ scenario records a population decline of -7.9%, reflecting the reduced net migration impacts in the later years of the last decade.
- 4.89 The EEFM ‘Jobs’ and ‘Employed people’ scenarios imply a higher population increase linked to employment growth. Population growth estimated by these scenarios is 21.5%-21.7% over the forecast period.
- 4.90 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the ‘Migration-led’ scenarios is increased. The ‘Migration-led 10yr – X’ scenario records a growth of 25.7%, whereas the ‘Migration-led 5yr – X’ scenario records a population increase of 12.8%, reflecting the

differential impact of the UPC component upon historical population change.

- 4.91 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a -7.7% population decline to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a more significant population decline, with a -15.6% decrease over the forecast period.
- 4.92 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is just 0.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.93 Considering the average of the A and B alternatives, suggests a dwelling requirement of 590-594 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 936 dwellings per year. The two 'Migration-led' scenarios record a more variable range of outcomes, -133-107 dwellings per year.
- 4.94 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 337-641 per year.

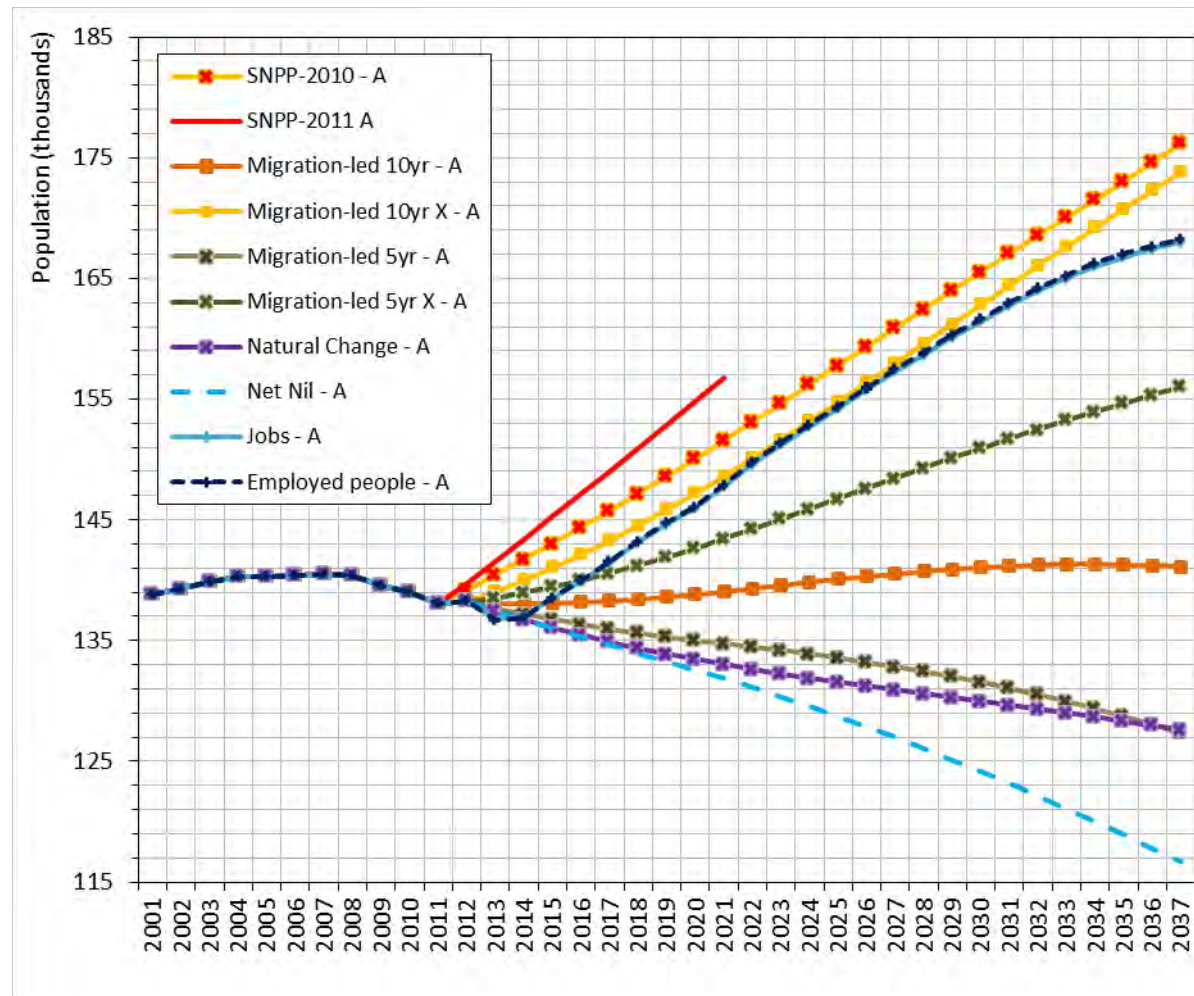
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
SNPP-2010	939	936	938
Migration-led 10yr X	641	641	641
Employed people	593	594	594
Jobs	589	590	590
Migration-led 5yr X	336	338	337
Migration-led 10yr	107	107	107
Migration-led 5yr	-134	-132	-133
Net Nil	-201	-196	-198
Natural Change	-260	-260	-260

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Tendring

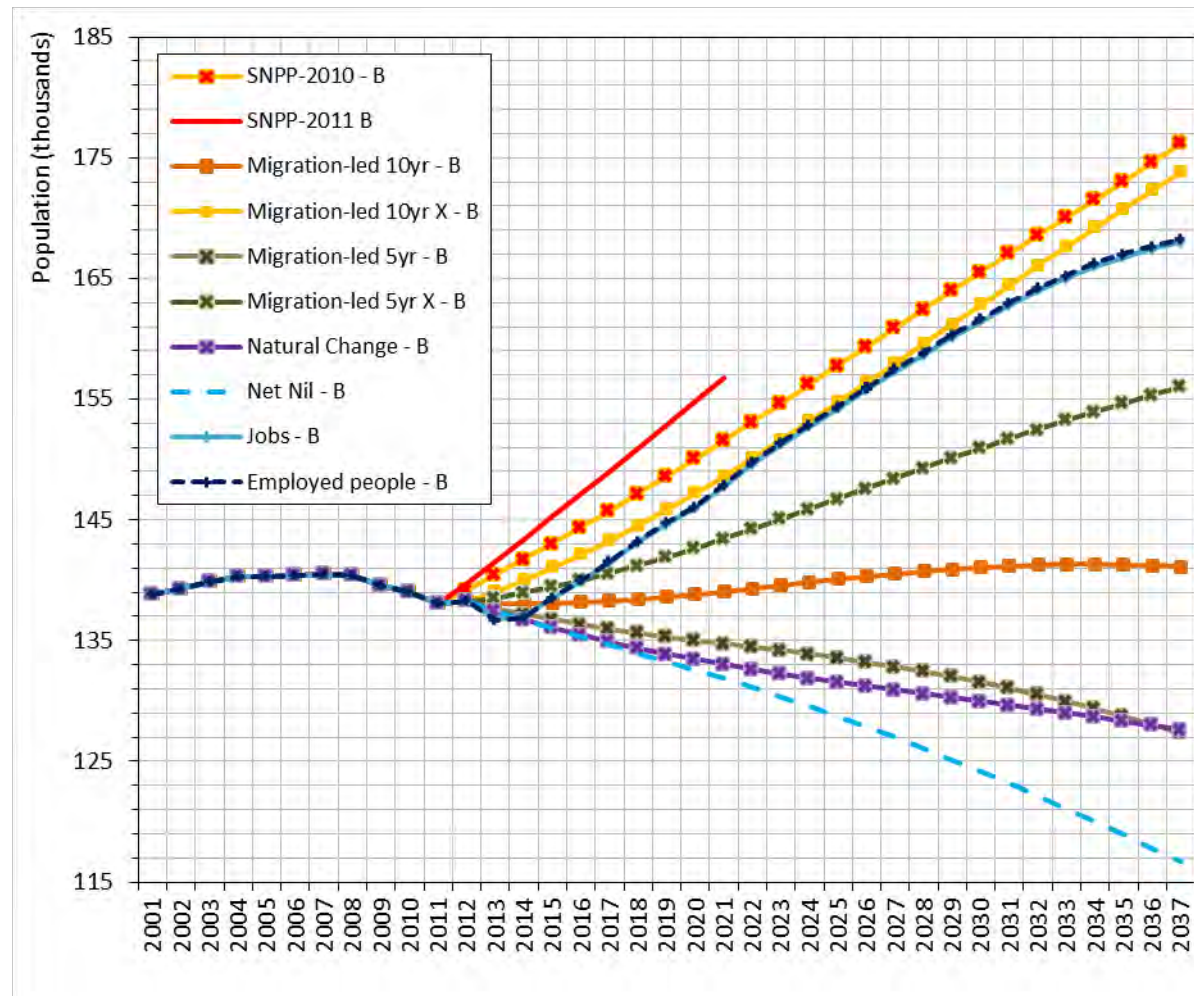
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - A	36,993	26.6%	21,792	34.5%	2,204	939	277
Migration-led 10yr X - A	35,525	25.7%	14,871	23.9%	1,756	641	306
Employed people - A	29,952	21.7%	13,758	22.1%	1,650	593	170
Jobs - A	29,723	21.5%	13,663	21.9%	1,642	589	167
Migration-led 5yr X - A	17,731	12.8%	7,786	12.5%	1,135	336	56
Migration-led 10yr - A	2,822	2.0%	2,477	4.0%	657	107	-171
Natural Change - A	-10,646	-7.7%	-6,024	-9.7%	0	-260	-216
Migration-led 5yr - A	-10,955	-7.9%	-3,112	-5.0%	161	-134	-353
Net Nil - A	-21,599	-15.6%	-4,664	-7.5%	0	-201	-524

Tendring

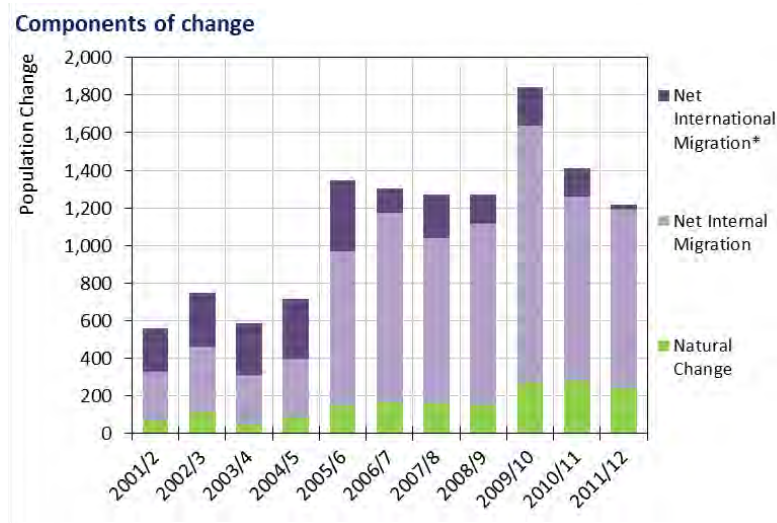
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - B	36,993	26.6%	21,721	34.5%	2,204	936	277
Migration-led 10yr X - B	35,525	25.7%	14,867	23.9%	1,756	641	306
Employed people - B	29,952	21.7%	13,782	22.1%	1,650	594	170
Jobs - B	29,723	21.5%	13,688	22.0%	1,642	590	167
Migration-led 5yr X - B	17,731	12.8%	7,851	12.6%	1,135	338	56
Migration-led 10yr - B	2,822	2.0%	2,493	4.0%	657	107	-171
Natural Change - B	-10,646	-7.7%	-6,027	-9.7%	0	-260	-216
Migration-led 5yr - B	-10,955	-7.9%	-3,055	-4.9%	161	-132	-353
Net Nil - B	-21,599	-15.6%	-4,544	-7.3%	0	-196	-524

Uttlesford – scenario summary

- 4.95 Population growth has been dominated by the influence of internal migration, with a particularly strong net growth since 2005/6. Natural change has had a small and increasingly positive influence upon annual population change. International migration has had a positive impact upon growth in each year since 2001/02.



*Includes the UPC component of change

- 4.96 The 'SNPP-2010' scenario suggests 30.8% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are higher than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 41.7%, whereas the 'Migration-led 5yr' scenario records a population change of 52.2%, reflecting the very high net migration impacts in the later years of the last decade.
- 4.97 The EEFM 'Jobs' and 'Employed people' scenarios imply a lower population increase linked to employment growth. Population growth estimated by these scenarios is 28.1-29.9% over the forecast period.
- 4.98 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 38.2%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 49.8%, reflecting the differential impact of the UPC component upon historical population change.

- 4.99 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 4.1% population increase to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a population decline, with a -4.2% decrease over the forecast period.
- 4.100 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 9.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.101 Considering the average of the A and B alternatives, suggests a dwelling requirement of 451-473 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 499 dwellings per year. The two 'Migration-led' scenarios record a higher range of outcomes, 604-745 dwellings per year.
- 4.102 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 563-716 per year.

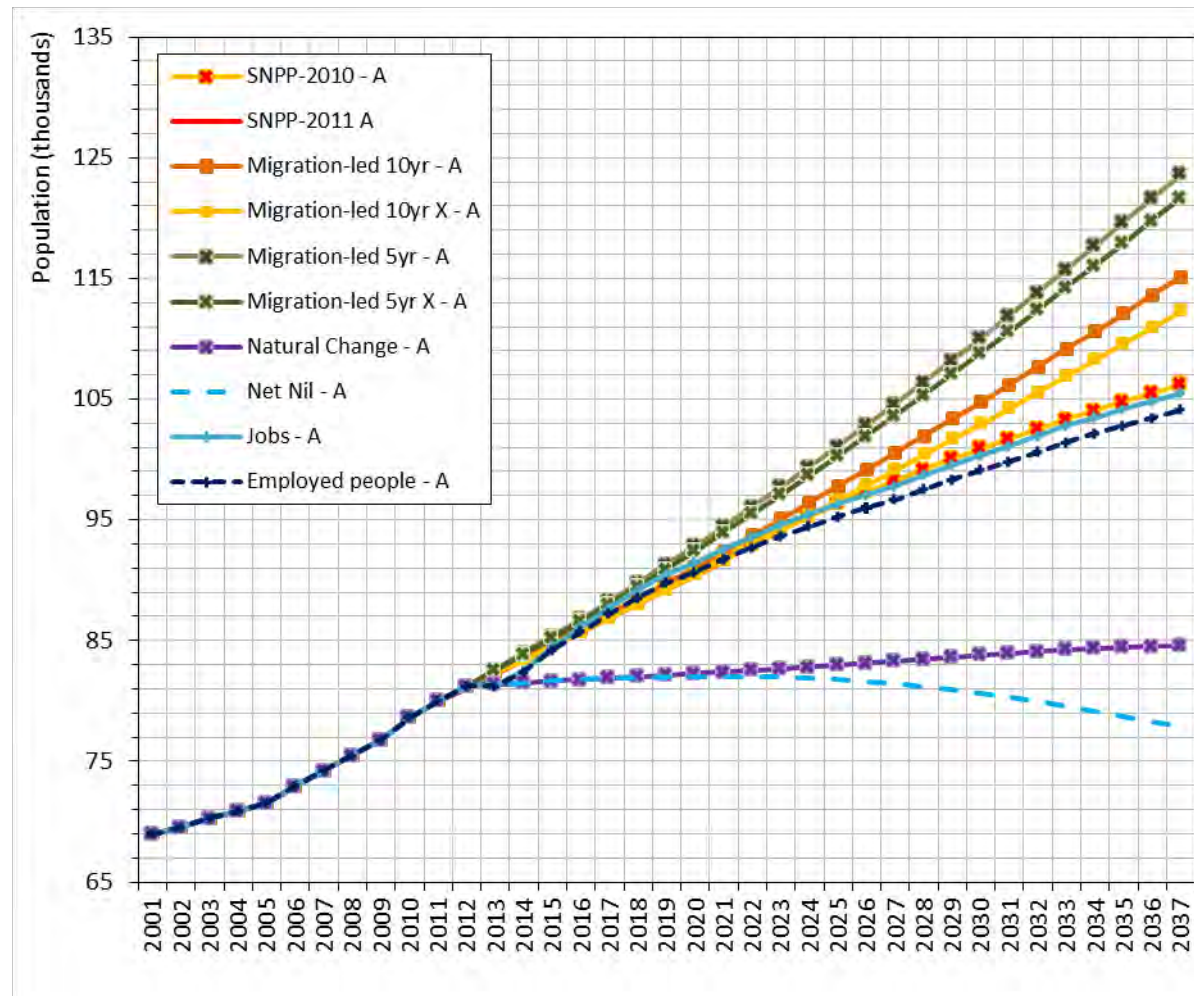
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 5yr	715	774	745
Migration-led 5yr X	687	745	716
Migration-led 10yr	577	631	604
Migration-led 10yr X	537	589	563
SNPP-2010	478	520	499
Jobs	450	496	473
Employed people	428	474	451
Natural Change	113	159	136
Net Nil	120	134	127

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Uttlesford

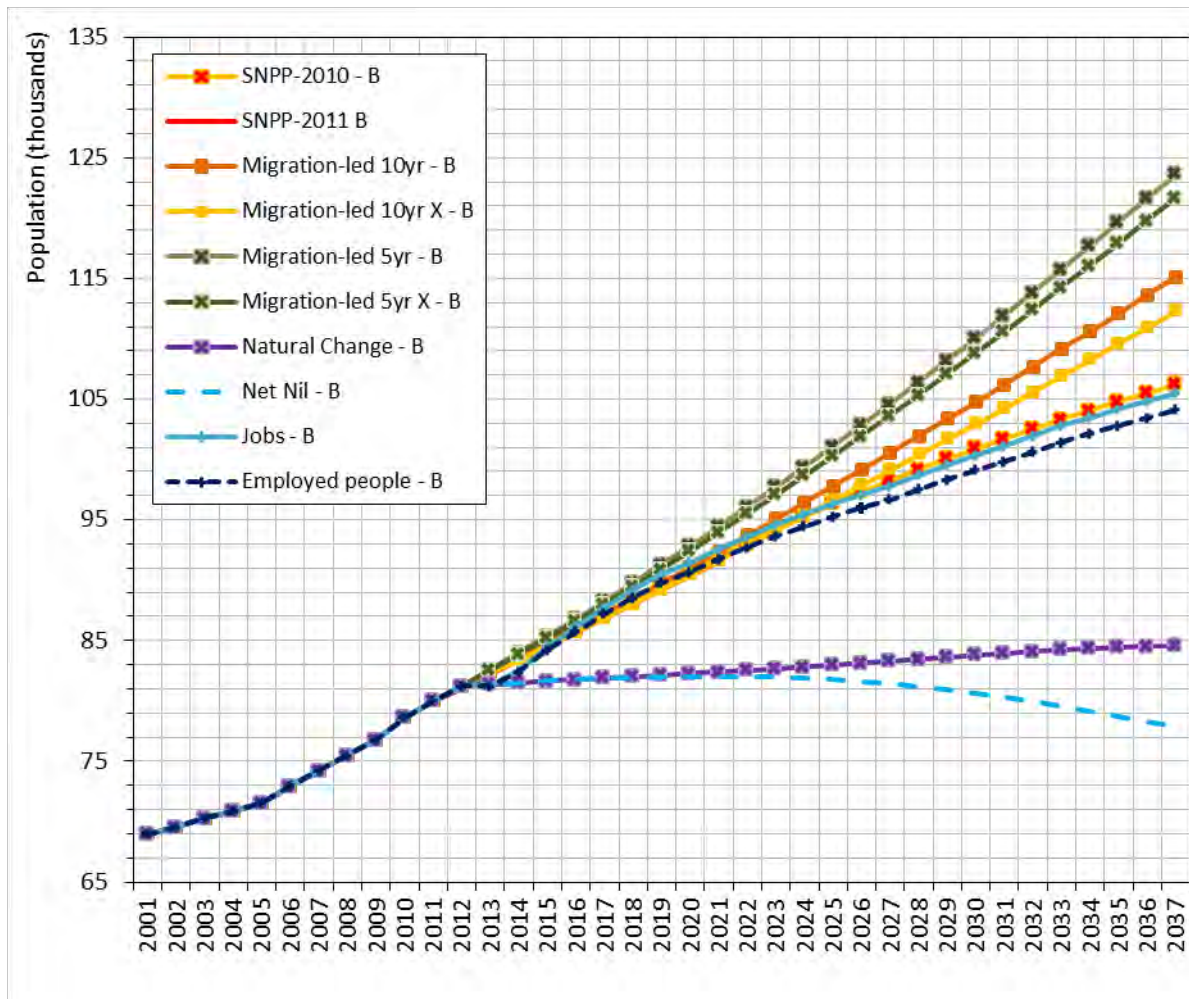
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 5yr - A	42,402	52.2%	17,039	53.0%	1,478	715	637
Migration-led 5yr X - A	40,464	49.8%	16,377	51.0%	1,413	687	596
Migration-led 10yr - A	33,873	41.7%	13,755	42.8%	1,187	577	466
Migration-led 10yr X - A	31,047	38.2%	12,803	39.8%	1,092	537	407
SNPP-2010 - A	25,011	30.8%	11,391	35.6%	866	478	328
Jobs - A	24,281	29.9%	10,722	33.4%	839	450	266
Employed people - A	22,853	28.1%	10,208	31.8%	792	428	237
Natural Change - A	3,311	4.1%	2,681	8.3%	0	113	-153
Net Nil - A	-3,442	-4.2%	2,868	8.9%	0	120	-285

Uttlesford

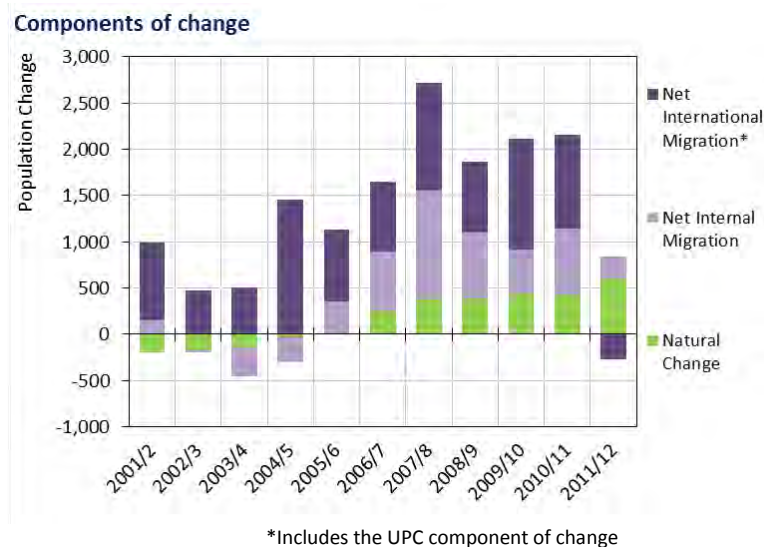
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 5yr - B	42,402	52.2%	18,438	57.3%	1,478	774	637
Migration-led 5yr X - B	40,464	49.8%	17,743	55.2%	1,413	745	596
Migration-led 10yr - B	33,873	41.7%	15,035	46.8%	1,187	631	466
Migration-led 10yr X - B	31,047	38.2%	14,035	43.6%	1,092	589	407
SNPP-2010 - B	25,011	30.8%	12,395	38.8%	866	520	328
Jobs - B	24,281	29.9%	11,815	36.7%	839	496	266
Employed people - B	22,853	28.1%	11,289	35.1%	792	474	237
Natural Change - B	3,311	4.1%	3,779	11.8%	0	159	-153
Net Nil - B	-3,442	-4.2%	3,197	9.9%	0	134	-285

Southend-on-Sea – scenario summary

- 4.103 Southend-on-Sea's population has been subject to a very significant upward adjustment as a result of the 2011 Census count. The scale of this adjustment suggests that there may have been a population undercount in the 2001 Census (although this is difficult to verify). This has very important implications when interpreting the range of scenarios presented here.
- 4.104 Since 2006/7, natural change has had a consistently positive impact upon growth. Likewise for internal migration which has seen a positive net impact upon growth since 2005/6. The impact of international migration is more difficult to determine with confidence due to the uncertainty associated with the robustness of the 2001 Census count. The illustration below has assumed that the UPC population adjustment is allocated to international migration, whereas a proportion is likely to be associated with the potential 2001 Census undercount issue. The presentation of the 'X' scenarios, below, provides some guidance on the potential impact of the UPC issue upon growth outcomes.



- 4.105 The 'SNPP-2010' scenario suggests 22.4% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are significantly higher than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 26.7%, whereas the 'Migration-led 5yr' scenario records a population change of 30.9%. The scale of these growth forecasts is being driven by the impact of the UPC adjustment which is compensating, not just for mis-estimation of international migration but also the possible undercount associated with the 2011 Census.

- 4.106 The EEFM 'Jobs' and 'Employed people' scenarios imply a lower population increase linked to employment growth. Population growth estimated by these scenarios is 16.9-18.5% over the forecast period.
- 4.107 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 10.3%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 16.2%. It might be argued that these scenarios provide more realistic growth outcomes (than the 'Migration-led 5yr' and 'Migration-led 10yr' scenarios) given the possible 2001 Census undercount issues. But there is still a residual uncertainty associated with the true scale of international migration within these scenarios, which the removal of UPC ignores.
- 4.108 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 4.9% population increase to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a slightly higher population increase, with a 5.6% decrease over the forecast period.
- 4.109 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 17.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios). Once again, the interpretation of the alternative household outcomes is made more difficult because of the uncertainty associated with the accuracy of the 2001 Census count.
- 4.110 Considering the average of the A and B alternatives, suggests a dwelling requirement of 768-819 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 870 dwellings per year.
- 4.111 The two 'Migration-led' scenarios record an unlikely range of outcomes, 1,068-1,203 dwellings per year. The 'X' scenarios, which have removed UPC from the migration assumptions, suggest significantly lower dwelling growth than the 'Migration-led' scenarios, in the range 582-761 per year.

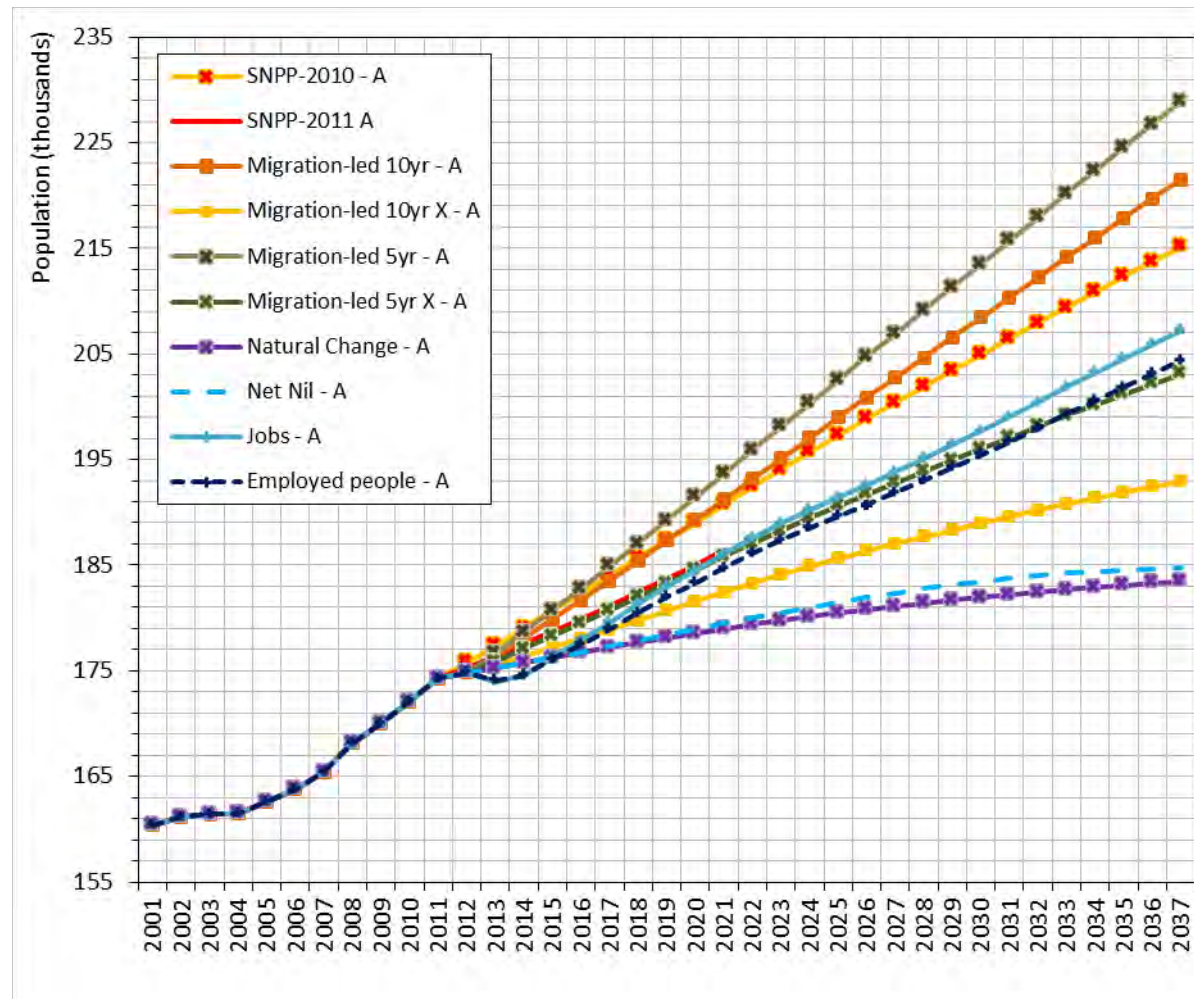
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 5yr	1,132	1,274	1,203
Migration-led 10yr	999	1,136	1,068
SNPP-2010	800	940	870
Jobs	750	888	819
Employed people	699	837	768
Migration-led 5yr X	693	829	761
Migration-led 10yr X	517	648	582
Net Nil	363	502	433
Natural Change	248	384	316

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Southend-on-Sea

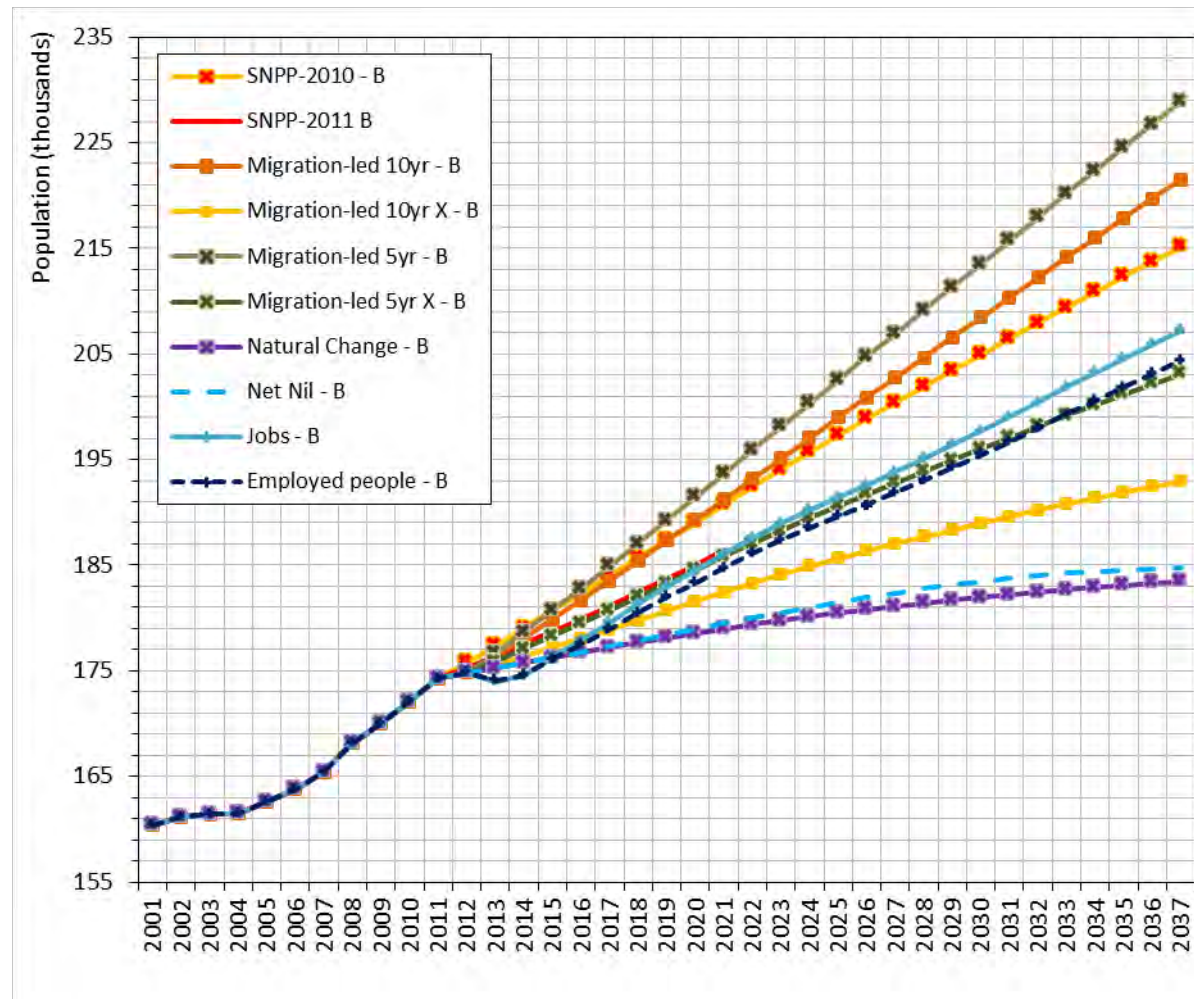
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 5yr - A	54,095	30.9%	26,885	35.7%	1,548	1,132	721
Migration-led 10yr - A	46,692	26.7%	23,730	31.5%	1,246	999	620
SNPP-2010 - A	39,351	22.4%	19,007	25.2%	968	800	469
Jobs - A	32,428	18.5%	17,803	23.6%	833	750	334
Employed people - A	29,551	16.9%	16,598	22.0%	739	699	284
Migration-led 5yr X - A	28,287	16.2%	16,468	21.9%	696	693	253
Migration-led 10yr X - A	18,085	10.3%	12,281	16.3%	318	517	97
Net Nil - A	9,856	5.6%	8,626	11.4%	0	363	-79
Natural Change - A	8,633	4.9%	5,885	7.8%	0	248	-108

Southend-on-Sea

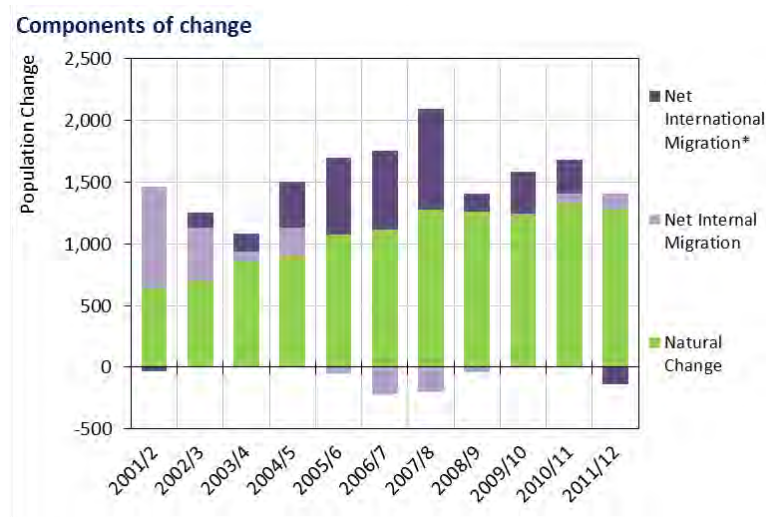
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 5yr - B	54,095	30.9%	30,266	40.1%	1,548	1,274	721
Migration-led 10yr - B	46,692	26.7%	26,981	35.8%	1,246	1,136	620
SNPP-2010 - B	39,351	22.4%	22,317	29.5%	968	940	469
Jobs - B	32,428	18.5%	21,089	28.0%	833	888	334
Employed people - B	29,551	16.9%	19,871	26.3%	739	837	284
Migration-led 5yr X - B	28,287	16.2%	19,698	26.1%	696	829	253
Migration-led 10yr X - B	18,085	10.3%	15,387	20.4%	318	648	97
Net Nil - B	9,856	5.6%	11,930	15.8%	0	502	-79
Natural Change - B	8,633	4.9%	9,114	12.1%	0	384	-108

Thurrock – scenario summary

- 4.112 Population growth has been dominated by the influence of natural change, increasing over the historical period. Both internal and international migration have had relatively small impacts in comparison, with internal migration fluctuating between a net loss and net gain per year.



*Includes the UPC component of change

- 4.113 The 'SNPP-2010' scenario suggests 30.5% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 28.4%, whereas the 'Migration-led 5yr' scenario records a population change 25.4%, reflecting the lower net migration impacts in the later years of the last decade.
- 4.114 The EEFM 'Jobs' and 'Employed people' scenarios imply a higher population increase linked to employment growth. Population growth estimated by these scenarios is 36.8%-38.3% over the forecast period.
- 4.115 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 30.0%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 26.4%, reflecting the differential impact of the UPC component upon historical population change.

- 4.116 Given the excess of births over deaths resulting from its youthful population structure, the 'Natural Change' scenario (with no migration impact and with only births and deaths driving growth) results in a 15.7% population increase to 2037. The 'Net-nil' scenario, which maintains a migration inflow and outflow but applies a zero migration balance, produces higher growth, with a 21.3% increase over the forecast period.
- 4.117 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 16.3% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.118 Considering the average of the A and B alternatives, suggests a dwelling requirement of 955-989 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 923 dwellings per year. The two 'Migration-led' scenarios record a higher range of outcomes, 683-745 dwellings per year.
- 4.119 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 707-784 per year.

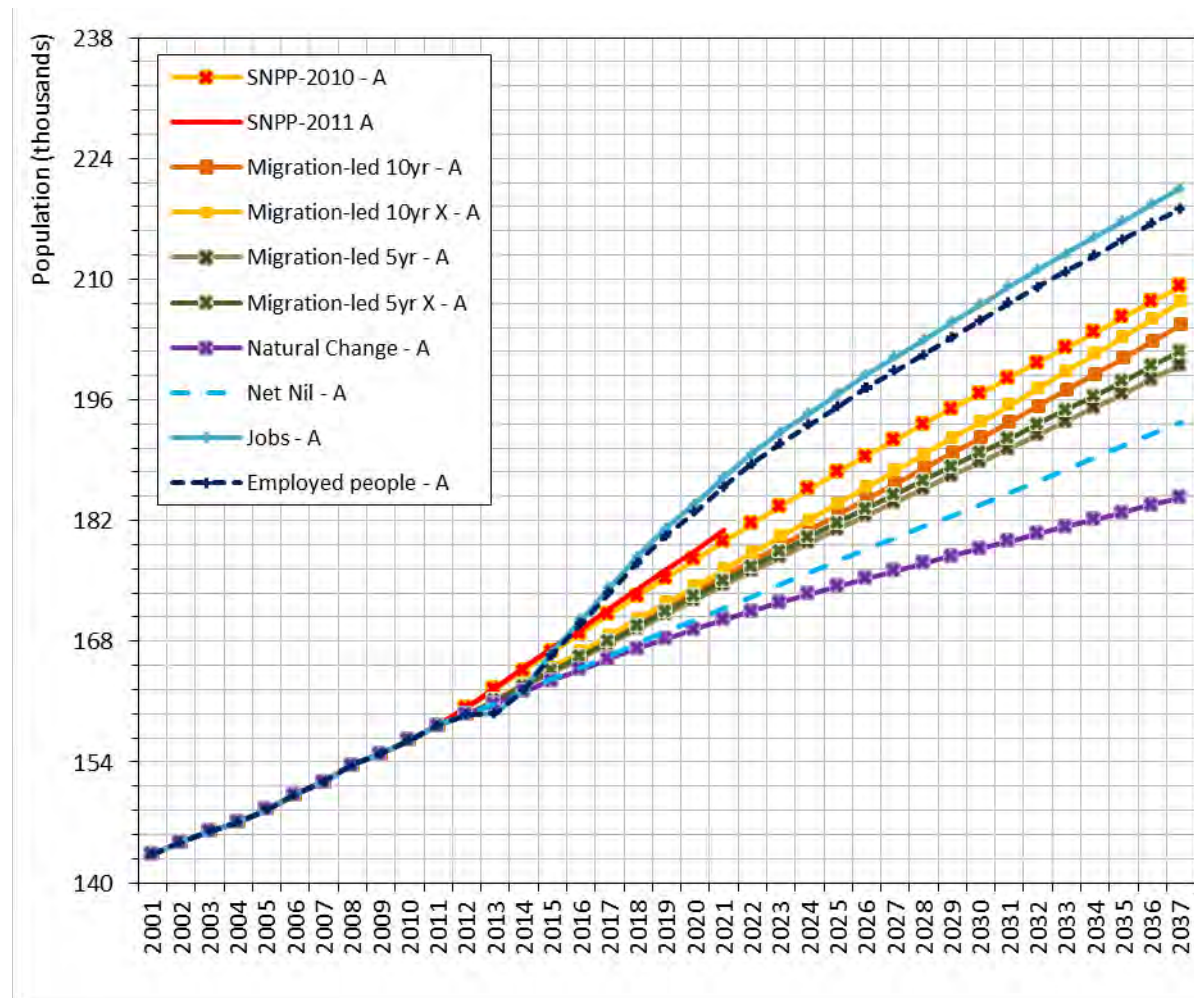
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	925	1,054	989
Employed people	891	1,018	955
SNPP-2010	861	986	923
Migration-led 10yr X	720	848	784
Migration-led 10yr	682	808	745
Migration-led 5yr X	647	767	707
Migration-led 5yr	624	742	683
Net Nil	543	656	599
Natural Change	496	593	544

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Thurrock

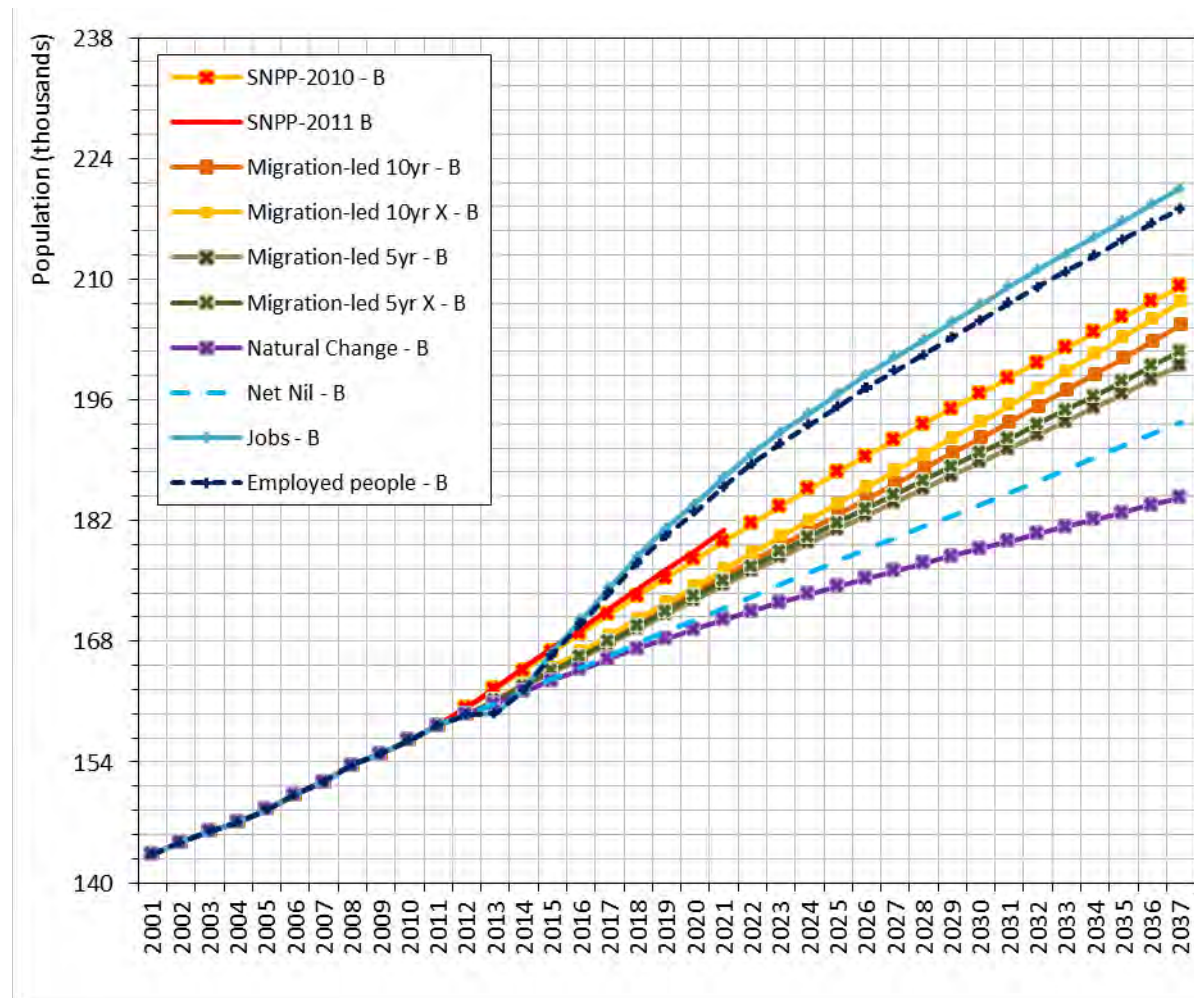
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	61,031	38.3%	22,576	35.8%	813	925	854
Employed people - A	58,696	36.8%	21,746	34.5%	744	891	815
SNPP-2010 - A	48,864	30.5%	21,009	32.8%	654	861	739
Migration-led 10yr X - A	47,890	30.0%	17,578	27.9%	418	720	665
Migration-led 10yr - A	45,230	28.4%	16,657	26.4%	336	682	619
Migration-led 5yr X - A	42,168	26.4%	15,786	25.0%	275	647	544
Migration-led 5yr - A	40,536	25.4%	15,225	24.1%	225	624	516
Net Nil - A	33,917	21.3%	13,245	21.0%	0	543	406
Natural Change - A	25,098	15.7%	12,101	19.2%	0	496	165

Thurrock

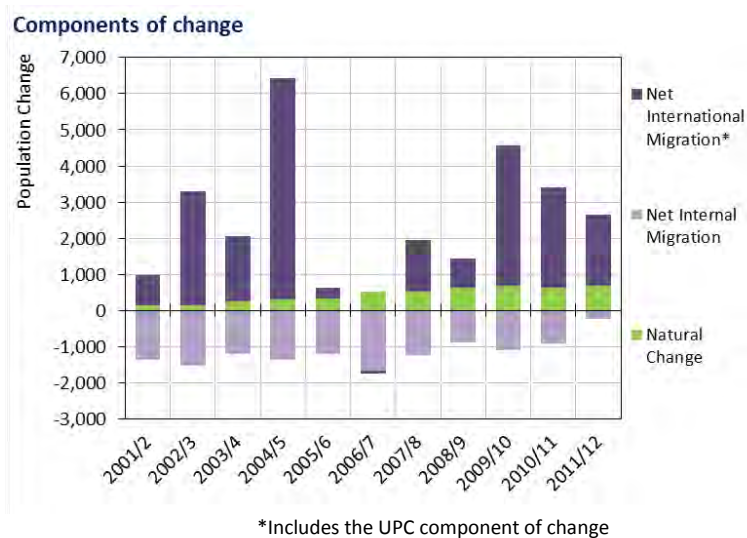
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	61,031	38.3%	25,719	40.7%	813	1,054	854
Employed people - B	58,696	36.8%	24,855	39.4%	744	1,018	815
SNPP-2010 - B	48,864	30.5%	24,070	37.5%	654	986	739
Migration-led 10yr X - B	47,890	30.0%	20,694	32.8%	418	848	665
Migration-led 10yr - B	45,230	28.4%	19,716	31.2%	336	808	619
Migration-led 5yr X - B	42,168	26.4%	18,710	29.6%	275	767	544
Migration-led 5yr - B	40,536	25.4%	18,114	28.7%	225	742	516
Net Nil - B	33,917	21.3%	16,015	25.4%	0	656	406
Natural Change - B	25,098	15.7%	14,472	22.9%	0	593	165

Cambridge – scenario summary

- 4.120 Cambridge’s population has been subject to a very significant upward adjustment as a result of the 2011 Census count. The resulting historical components of change suggest that, since 2001/02, natural change has had a consistently positive impact upon growth. In contrast, internal migration effects have resulted in a population decline in each year of the period, reducing in the latest years. International migration is identified as the dominant driver of growth over the 2001/02-2011/12 period, although challenges associated with the count of the inflow and outflow of students are likely to be an underlying issue in Cambridge.



- 4.121 The ‘SNPP-2010’ scenario suggests just 4.3% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are significantly higher than the ‘SNPP-2010’. The ‘Migration-led 10yr’ scenario records a growth of 34.8%, whereas the ‘Migration-led 5yr’ scenario records a population increase of 41.9%, reflecting the higher estimated net migration impacts in the latest year of the last decade.
- 4.122 The EEFM ‘Jobs’ and ‘Employed people’ scenarios imply a slightly higher population increase linked to employment growth. Population growth estimated by these scenarios is 23.9%-27.8% over the forecast period.
- 4.123 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the ‘Migration-led’ scenarios is reduced. The ‘Migration-led 10yr – X’ scenario records a growth of 10.6%, whereas the ‘Migration-led 5yr – X’ scenario records a population increase of 18.7%, reflecting the

differential impact of the UPC component upon historical population change.

- 4.124 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 10.0% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a slightly higher growth, with a 11.4% increase over the forecast period.
- 4.125 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 10.9% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.126 Considering the average of the A and B alternatives, suggests a dwelling requirement of 683-765 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at just 143 dwellings per year. The two 'Migration-led' scenarios record a range of outcomes that are higher than the EEFM alternatives, 838-1,043 dwellings per year.
- 4.127 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 374-595 per year.

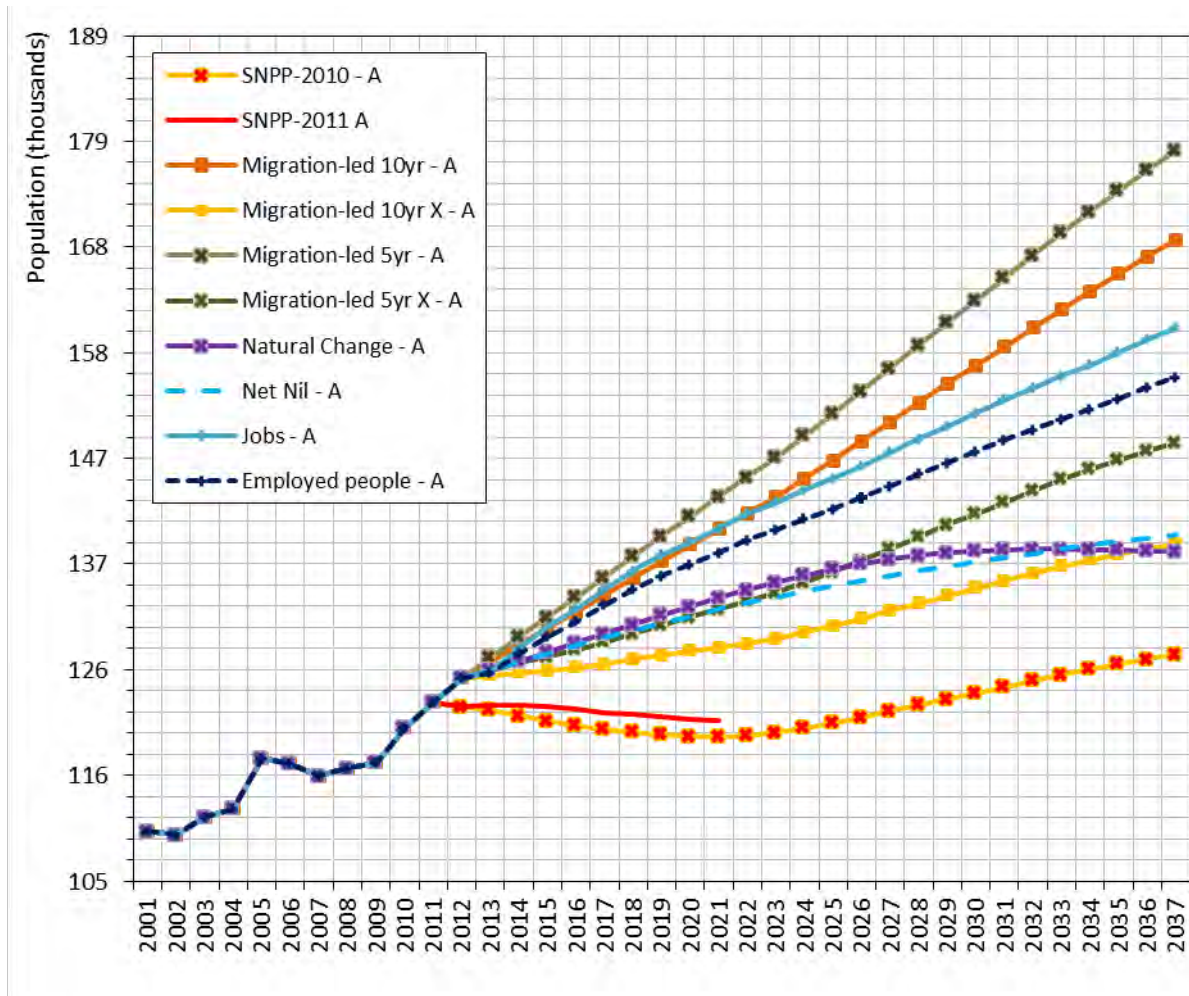
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 5yr	1,002	1,084	1,043
Natural Change	936	807	871
Migration-led 10yr	800	876	838
Jobs	734	796	765
Employed people	653	713	683
Migration-led 5yr X	568	622	595
Migration-led 10yr X	349	398	374
Net Nil	320	355	338
SNPP-2010	106	181	143

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Cambridge

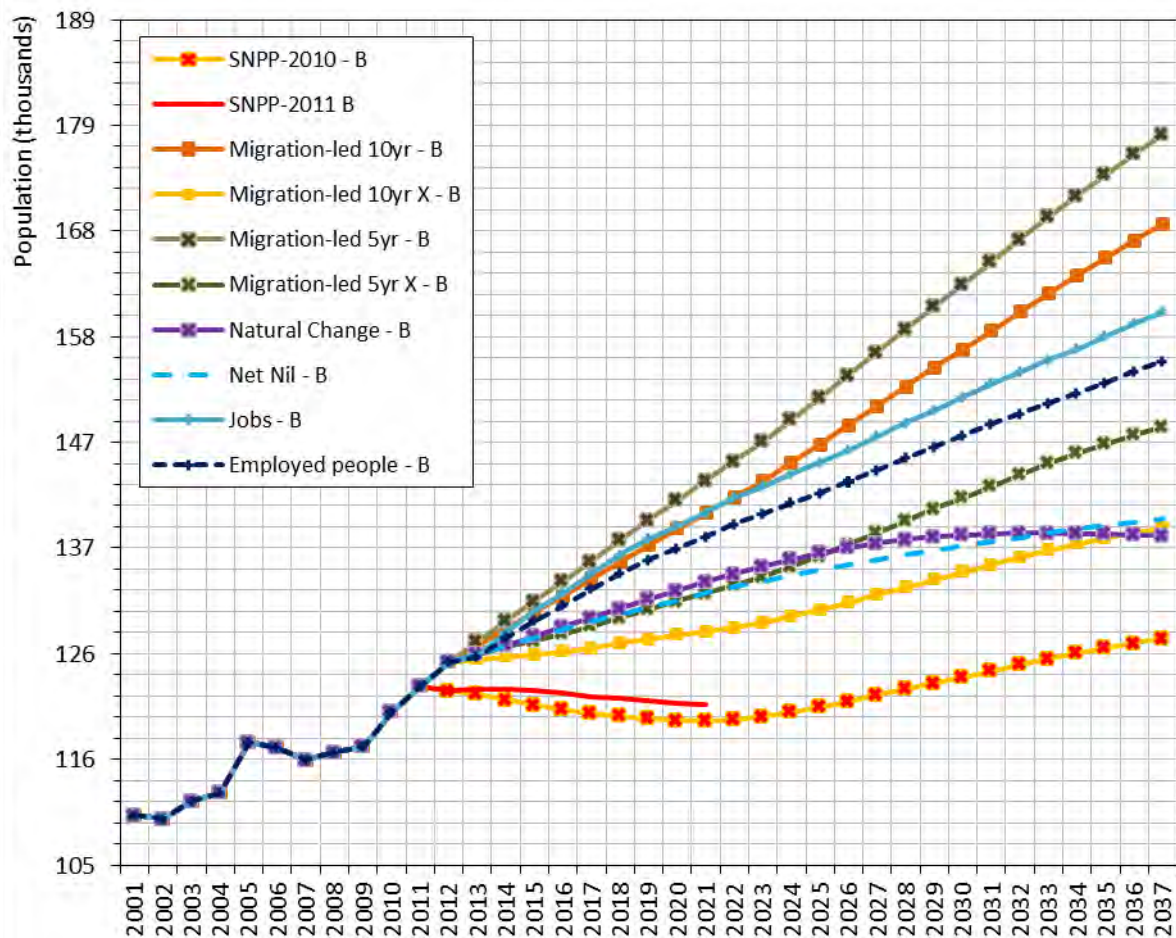
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 5yr - A	52,470	41.9%	24,234	51.2%	1,265	1,002	1,596
Migration-led 10yr - A	43,546	34.8%	19,357	40.9%	829	800	1,232
Jobs - A	34,818	27.8%	17,747	37.5%	660	734	973
Employed people - A	29,898	23.9%	15,782	33.4%	500	653	801
Migration-led 5yr X - A	23,391	18.7%	13,732	29.0%	331	568	589
Net Nil - A	14,274	11.4%	7,751	16.4%	0	320	82
Migration-led 10yr X - A	13,299	10.6%	8,451	17.9%	-130	349	189
Natural Change - A	12,577	10.0%	22,629	47.8%	0	936	551
SNPP-2010 - A	5,209	4.3%	2,563	5.7%	-185	106	-54

Cambridge

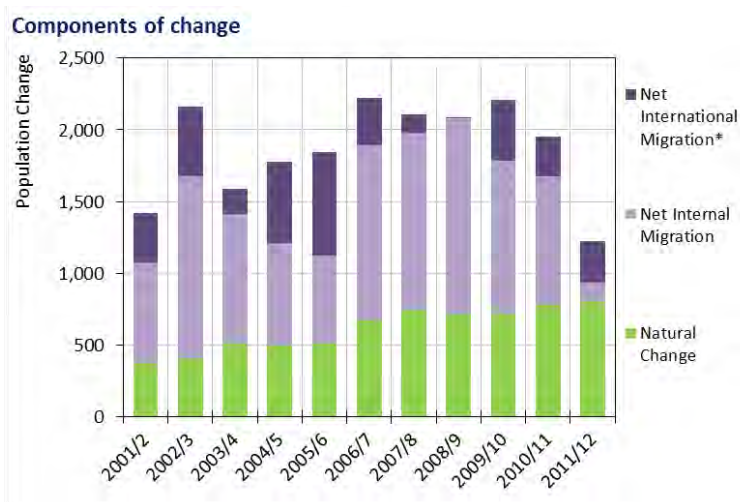
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 5yr - B	52,470	41.9%	26,225	55.2%	1,265	1,084	1,596
Migration-led 10yr - B	43,546	34.8%	21,186	44.6%	829	876	1,232
Jobs - B	34,818	27.8%	19,257	40.5%	660	796	973
Employed people - B	29,898	23.9%	17,234	36.3%	500	713	801
Migration-led 5yr X - B	23,391	18.7%	15,051	31.7%	331	622	589
Net Nil - B	14,274	11.4%	8,583	18.1%	0	355	82
Migration-led 10yr X - B	13,299	10.6%	9,625	20.3%	-130	398	189
Natural Change - B	12,577	10.0%	19,507	41.0%	0	807	551
SNPP-2010 - B	5,209	4.3%	4,370	9.7%	-185	181	-54

South Cambridgeshire – scenario summary

- 4.128 Natural change has had an increasingly positive impact upon population growth since 2001/02. Growth through internal migration has been positive in all years and most significant in 2006/07-2010/11. International migration has had a smaller but positive impact upon annual population change. 2011/12 saw a sharp fall in the rate of population increase.



*Includes the UPC component of change

- 4.129 The 'SNPP-2010' scenario suggests 24.9% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are higher than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 35.0%, whereas the 'Migration-led 5yr' scenario records a population increase of 32.0%, reflecting the lower net migration impacts in the latest year of the last decade.
- 4.130 The EEFM 'Jobs' and 'Employed people' scenarios imply a slightly higher population increase linked to employment growth. Population growth estimated by these scenarios is 35.3%-36.0% over the forecast period.
- 4.131 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 35.0%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 34.6%, reflecting the differential impact of the UPC component upon historical population change.

- 4.132 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 7.3% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a slightly lower growth, with a 5.8% increase over the forecast period.
- 4.133 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 9.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.134 Considering the average of the A and B alternatives, suggests a dwelling requirement of 1,103-1,118 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 828 dwellings per year. The two 'Migration-led' scenarios record a range of outcomes that are marginally less than the EEFM alternatives, 1,022-1,061 dwellings per year.
- 4.135 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 1,084-1,111 per year.

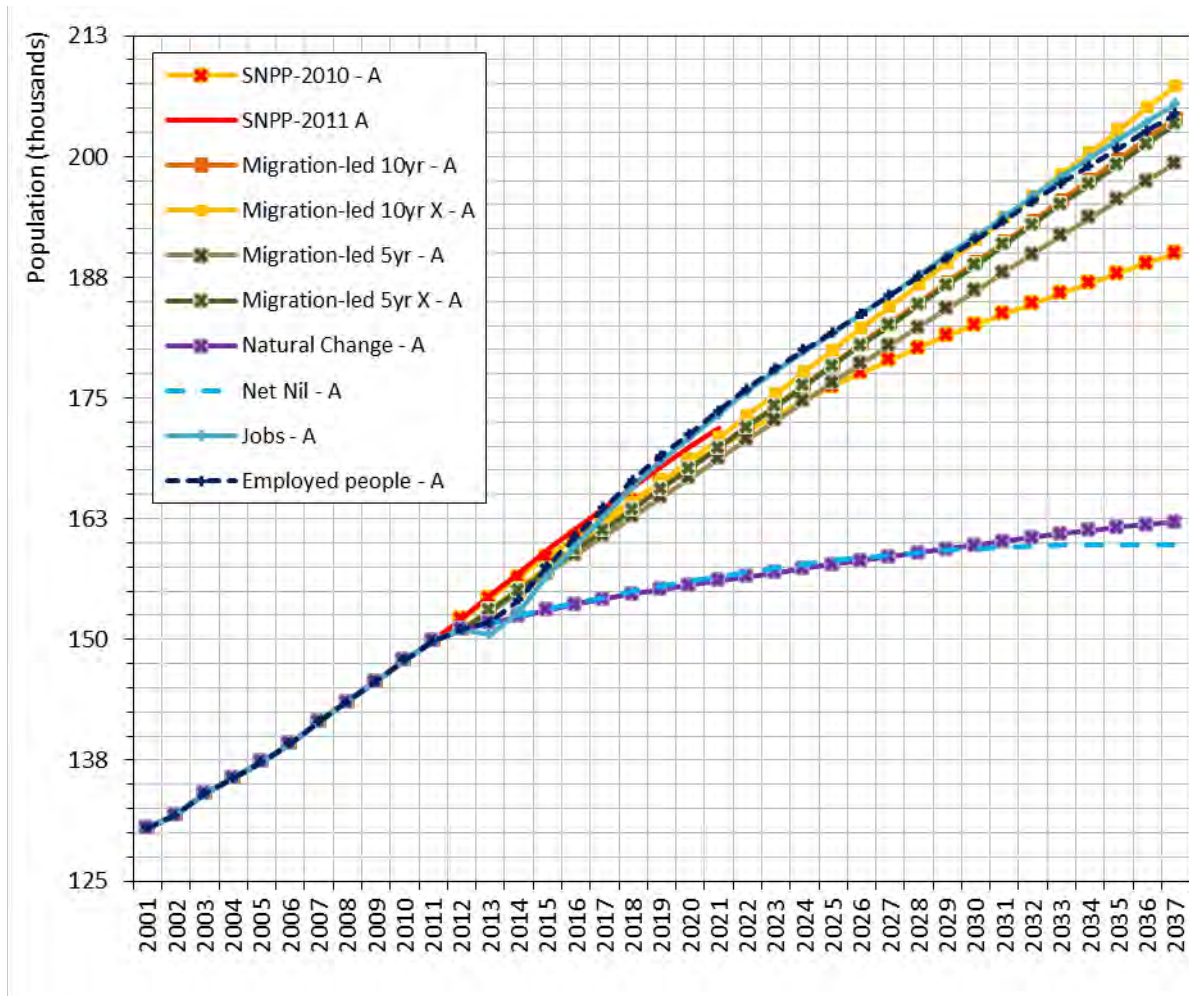
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	1,072	1,164	1,118
Migration-led 10yr X	1,062	1,160	1,111
Employed people	1,058	1,148	1,103
Migration-led 5yr X	1,037	1,132	1,084
Migration-led 10yr	1,012	1,109	1,061
Migration-led 5yr	976	1,068	1,022
SNPP-2010	789	867	828
Net Nil	369	432	401
Natural Change	349	444	397

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

South Cambridgeshire

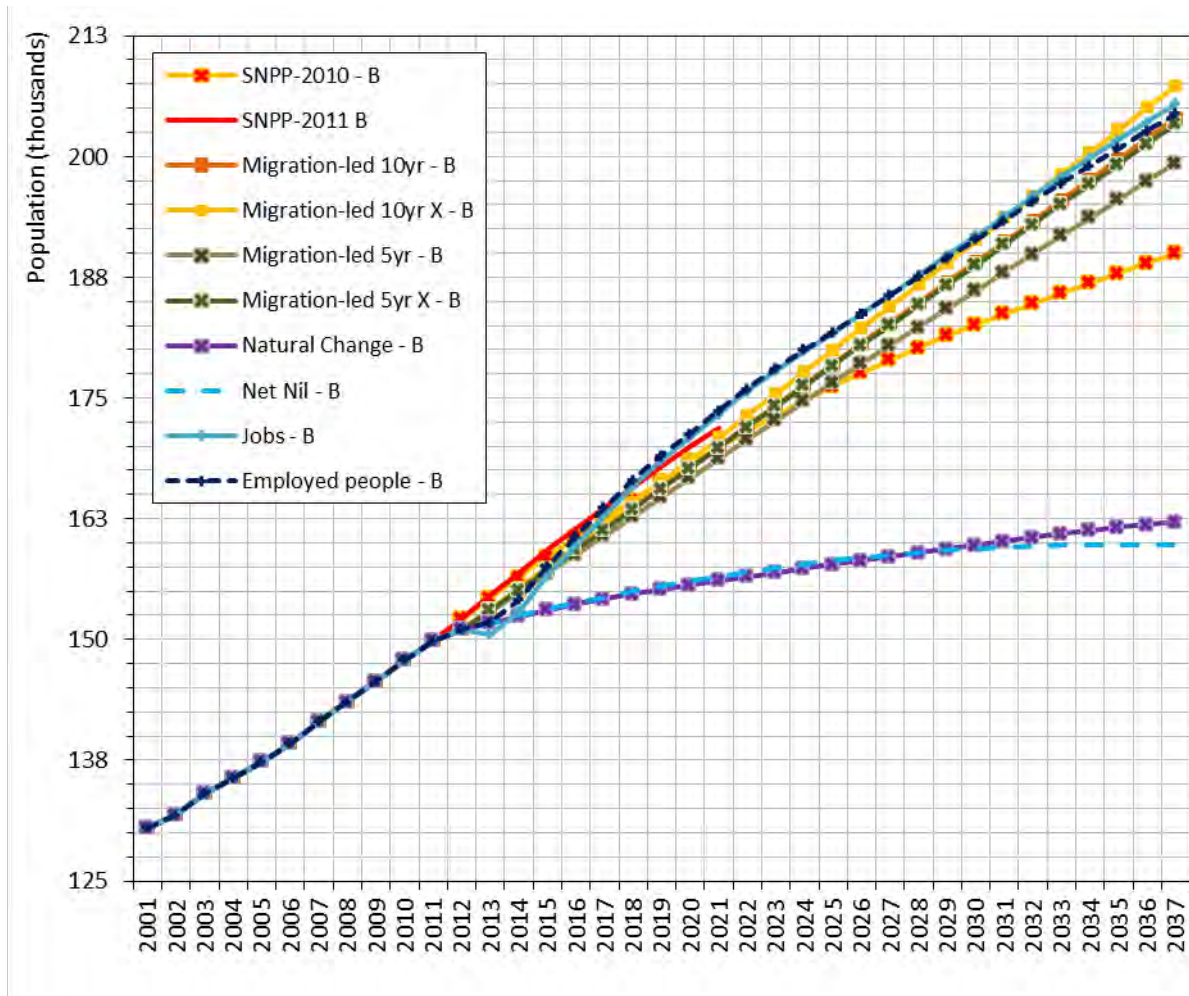
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr X - A	56,256	37.2%	25,786	42.1%	1,562	1,062	792
Jobs - A	54,412	36.0%	26,043	42.6%	1,503	1,072	782
Employed people - A	53,398	35.3%	25,689	42.0%	1,466	1,058	763
Migration-led 10yr - A	52,933	35.0%	24,589	40.2%	1,454	1,012	721
Migration-led 5yr X - A	52,315	34.6%	25,175	41.1%	1,446	1,037	743
Migration-led 5yr - A	48,268	32.0%	23,695	38.7%	1,313	976	657
SNPP-2010 - A	37,891	24.9%	19,159	31.1%	977	789	474
Natural Change - A	11,065	7.3%	8,481	13.9%	0	349	-184
Net Nil - A	8,765	5.8%	8,965	14.6%	0	369	-144

South Cambridgeshire

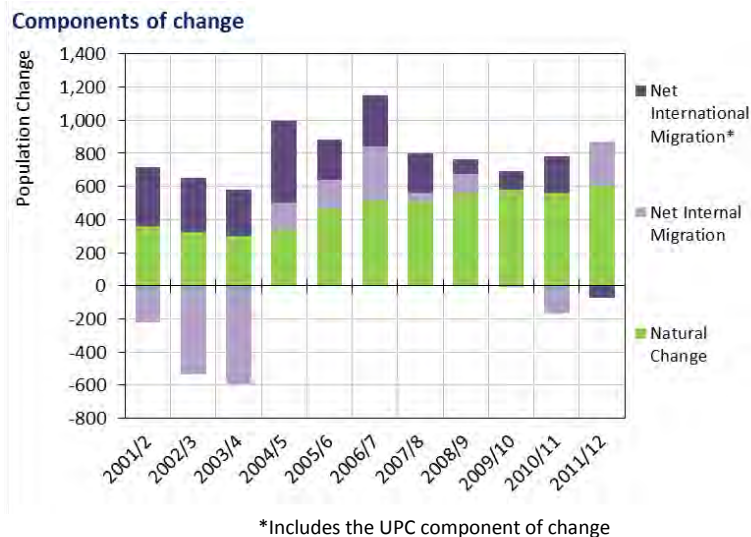
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr X - B	56,256	37.2%	28,177	46.0%	1,562	1,160	792
Jobs - B	54,412	36.0%	28,270	46.2%	1,503	1,164	782
Employed people - B	53,398	35.3%	27,887	45.6%	1,466	1,148	763
Migration-led 10yr - B	52,933	35.0%	26,931	44.0%	1,454	1,109	721
Migration-led 5yr X - B	52,315	34.6%	27,483	44.9%	1,446	1,132	743
Migration-led 5yr - B	48,268	32.0%	25,944	42.4%	1,313	1,068	657
SNPP-2010 - B	37,891	24.9%	21,063	34.2%	977	867	474
Natural Change - B	11,065	7.3%	10,783	17.6%	0	444	-184
Net Nil - B	8,765	5.8%	10,499	17.2%	0	432	-144

Broxbourne – scenario summary

- 4.136 Natural change has had an increasingly positive impact upon population growth since 2001/02. Growth through internal migration has been less significant and has varied between a positive and negative contribution to population change. International migration has generally had a positive impact upon annual growth, with the exception of the latest years of the time-series.



- 4.137 The 'SNPP-2010' scenario suggests 23.4% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 20.7%, whereas the 'Migration-led 5yr' scenario records a population increase of 19.3%, reflecting slightly lower net migration impacts in the later years of the last decade.
- 4.138 The EEFM 'Jobs' and 'Employed people' scenarios imply a population increase that is higher than the 'Migration-led' alternatives but below the 'SNPP-2010'. Population growth estimated by these scenarios is 21.2-23.0% over the forecast period.
- 4.139 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 14.8%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 14.3%, reflecting the differential impact of the UPC component upon historical population change.
- 4.140 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving

growth, results in a 10.5% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a higher growth, with a 15.4% increase over the forecast period.

- 4.141 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 29.9% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.142 Considering the average of the A and B alternatives, suggests a dwelling requirement of 360-385 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 411 dwellings per year. The two 'Migration-led' scenarios record a range of outcomes that are lower than the EEFM alternatives, 332-334 dwellings per year.
- 4.143 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 248-260 per year.

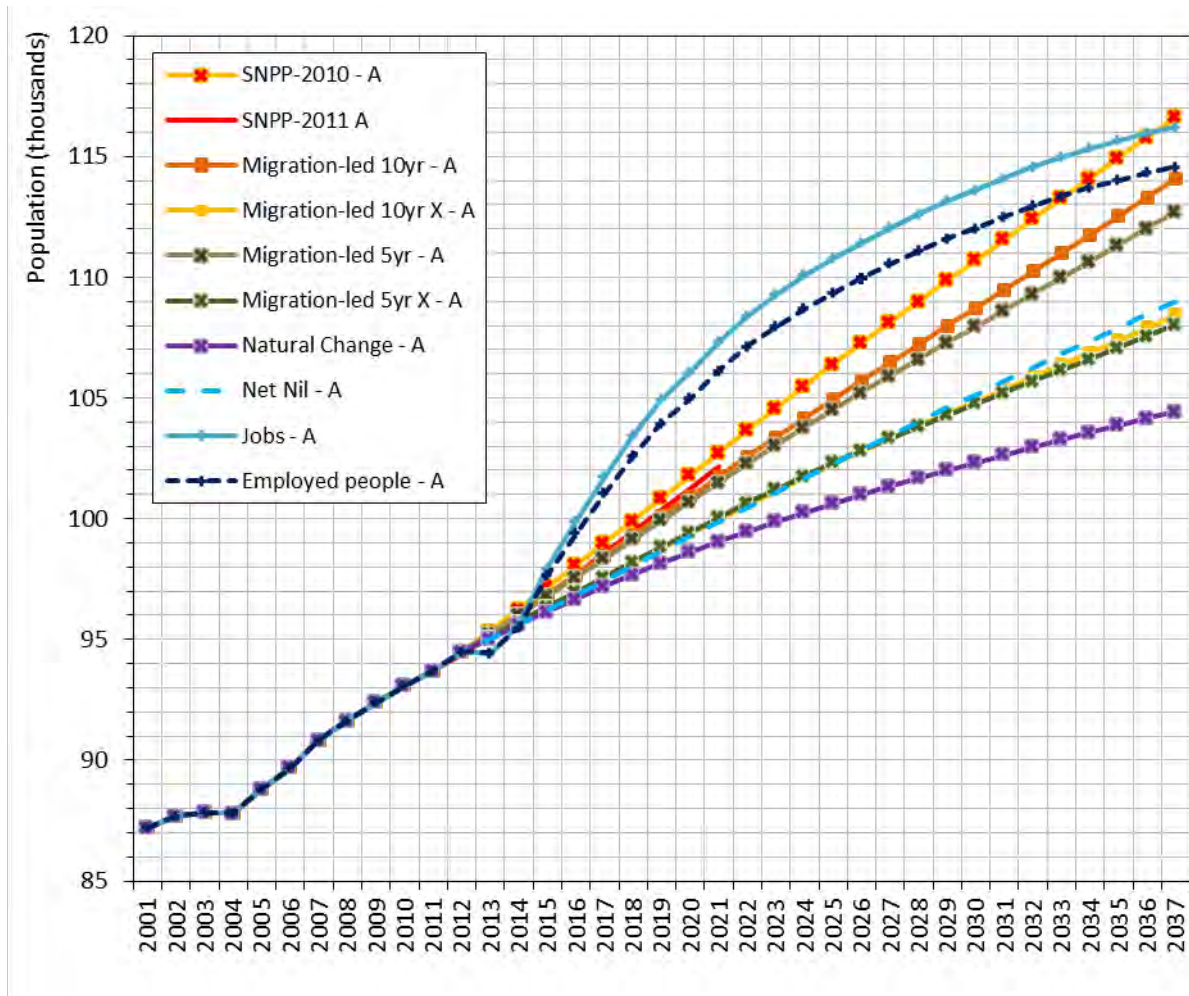
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
SNPP-2010	367	456	411
Jobs	342	428	385
Employed people	317	403	360
Migration-led 10yr	288	379	334
Migration-led 5yr	288	375	332
Net Nil	226	309	267
Migration-led 5yr X	219	301	260
Natural Change	207	290	248
Migration-led 10yr X	205	290	248

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Broxbourne

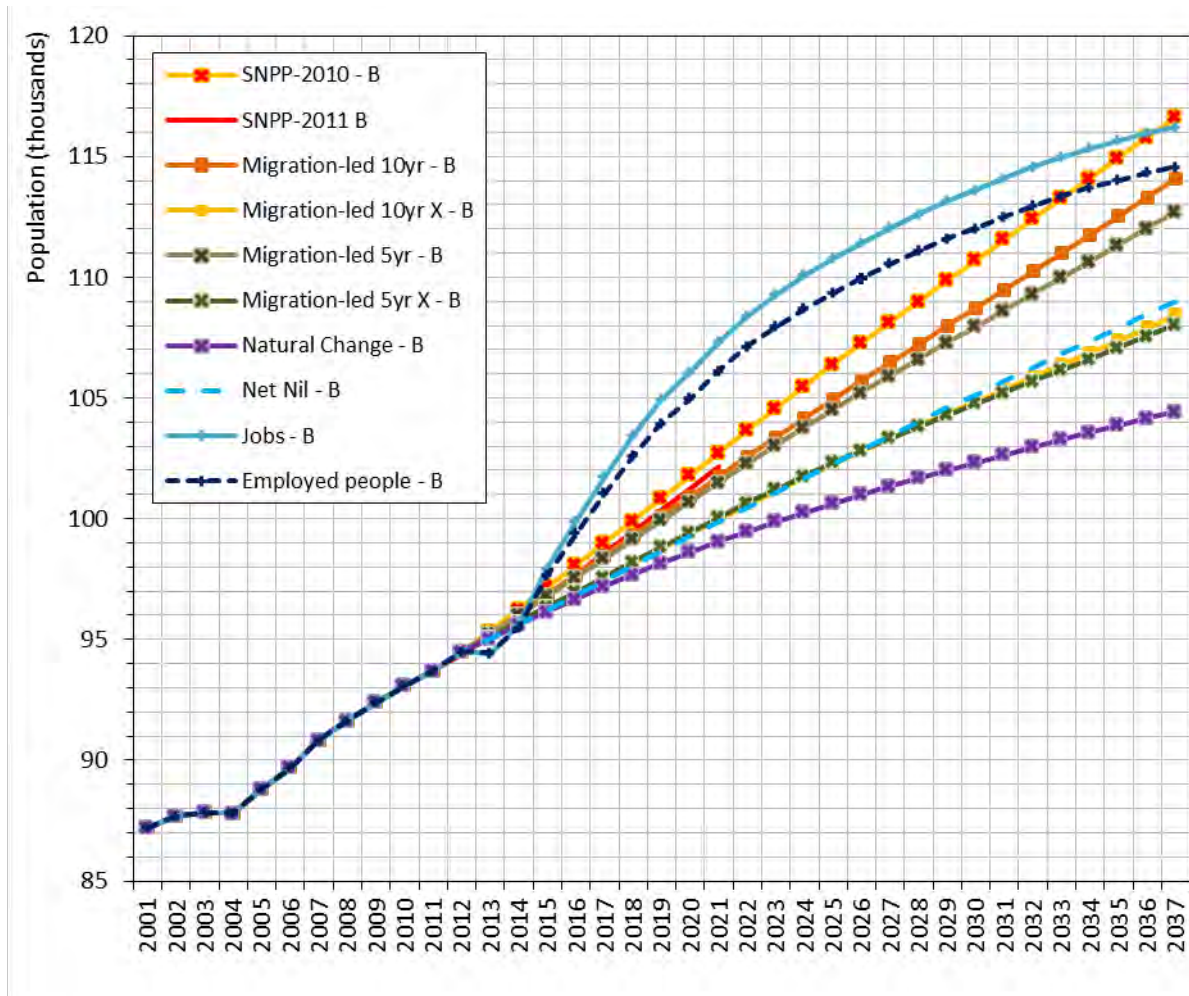
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - A	22,138	23.4%	8,804	23.1%	354	367	283
Jobs - A	21,720	23.0%	8,216	21.6%	237	342	221
Employed people - A	20,075	21.2%	7,627	20.1%	189	317	193
Migration-led 10yr - A	19,601	20.7%	6,928	18.2%	192	288	196
Migration-led 5yr - A	18,227	19.3%	6,920	18.2%	161	288	164
Net Nil - A	14,519	15.4%	5,418	14.2%	0	226	125
Migration-led 10yr X - A	13,940	14.8%	4,931	13.0%	6	205	100
Migration-led 5yr X - A	13,549	14.3%	5,254	13.8%	7	219	86
Natural Change - A	9,935	10.5%	4,966	13.1%	0	207	6

Broxbourne

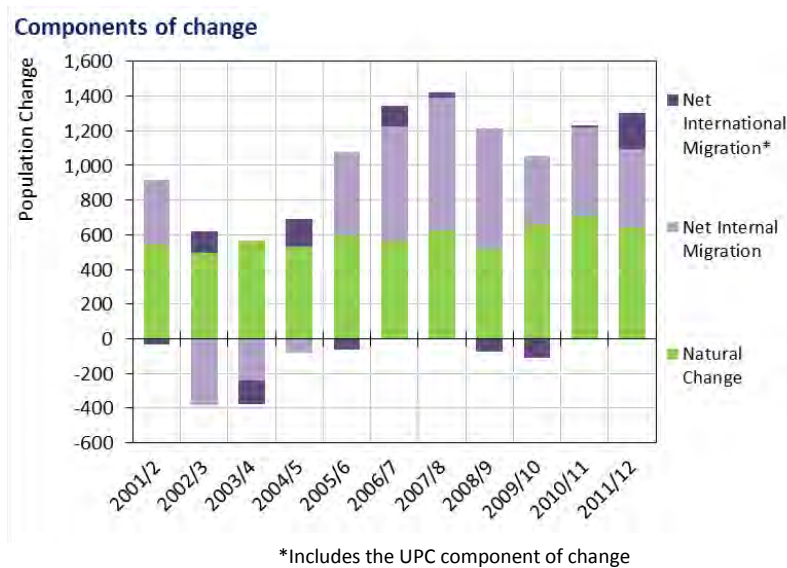
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
SNPP-2010 - B	22,138	23.4%	10,947	28.7%	354	456	283
Jobs - B	21,720	23.0%	10,279	27.0%	237	428	221
Employed people - B	20,075	21.2%	9,672	25.4%	189	403	193
Migration-led 10yr - B	19,601	20.7%	9,095	23.9%	192	379	196
Migration-led 5yr - B	18,227	19.3%	9,009	23.6%	161	375	164
Net Nil - B	14,519	15.4%	7,432	19.5%	0	309	125
Migration-led 10yr X - B	13,940	14.8%	6,972	18.3%	6	290	100
Migration-led 5yr X - B	13,549	14.3%	7,240	19.0%	7	301	86
Natural Change - B	9,935	10.5%	6,966	18.3%	0	290	6

East Hertfordshire – scenario summary

4.144 Natural change has been the most significant driver of population growth since 2001/02. Growth through internal migration has also been important but this has varied from a net loss in 2002/03-2004/05 to a net gain thereafter. Over the course of the 2001-2012 period international migration has contributed a relatively small amount to the average annual net increase or decrease in population.



4.145 The 'SNPP-2010' scenario suggests 23.3% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 14.1%, whereas the 'Migration-led 5yr' scenario records a population increase of 20.2%, reflecting higher net migration impacts in the later years of the last decade.

4.146 The EEFM 'Jobs' and 'Employed people' scenarios imply a population increase that is higher than the 'Migration-led' and 'SNPP-2010' alternatives, driven by anticipated jobs growth. Population growth estimated by these scenarios is 31.8%-34.9% over the forecast period.

4.147 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 18.1%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 24.1%, reflecting the differential impact of the UPC component upon historical population change.

- 4.148 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 7.7% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a slightly higher growth, with a 7.8% increase over the forecast period.
- 4.149 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 11.3% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.150 Considering the average of the A and B alternatives, suggests a dwelling requirement of 904-972 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 761 dwellings per year. The two 'Migration-led' scenarios record a range of outcomes that are lower than the EEFM alternatives, 511-648 dwellings per year.
- 4.151 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 592-726 per year.

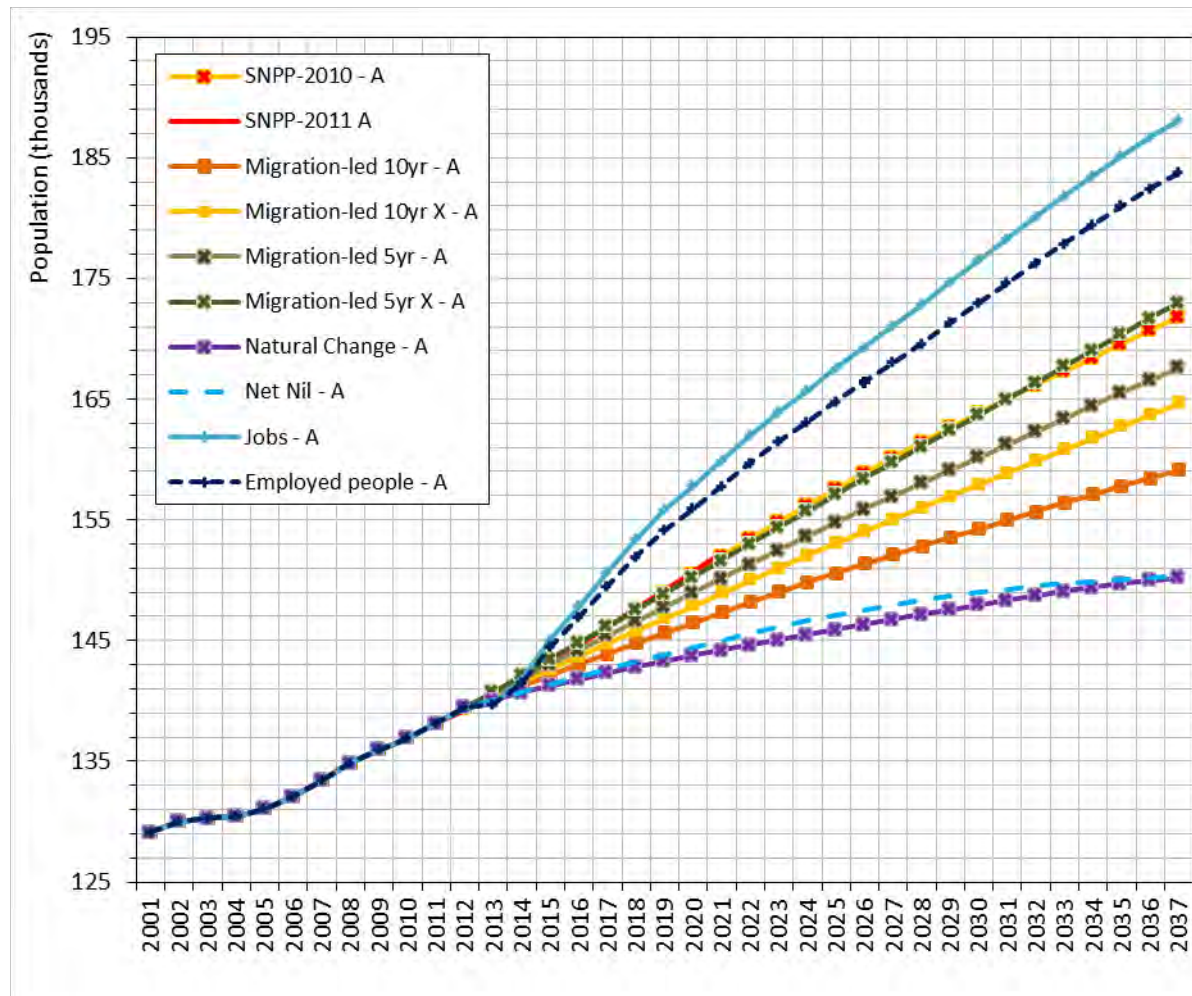
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	928	1,016	972
Employed people	861	946	904
SNPP-2010	723	799	761
Migration-led 5yr X	687	766	726
Migration-led 5yr	610	685	648
Migration-led 10yr X	555	629	592
Migration-led 10yr	476	545	511
Net Nil	362	423	393
Natural Change	347	410	378

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

East Hertfordshire

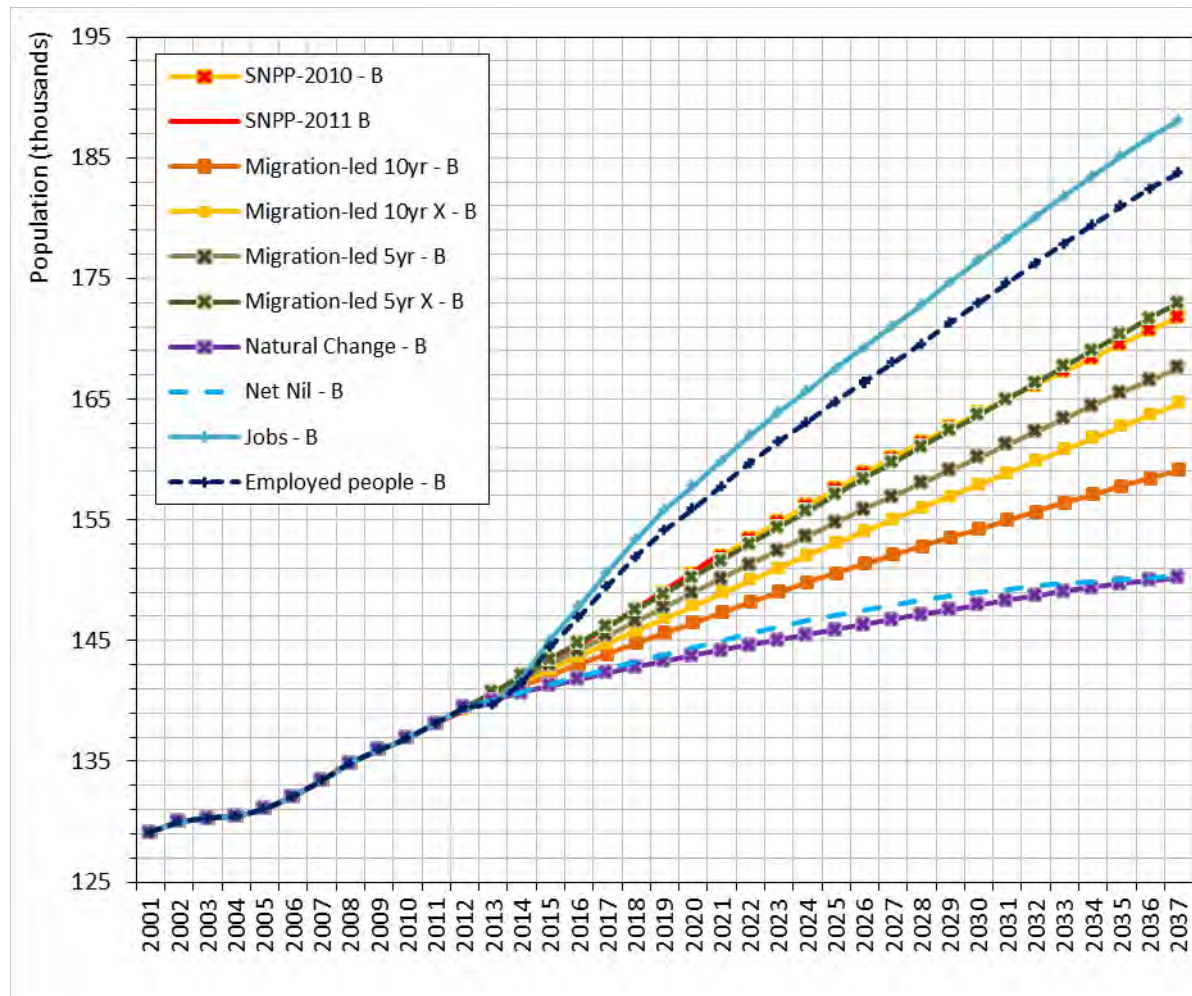
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	48,665	34.9%	22,491	39.1%	1,251	928	540
Employed people - A	44,323	31.8%	20,862	36.3%	1,115	861	465
Migration-led 5yr X - A	33,554	24.1%	16,643	28.9%	774	687	277
SNPP-2010 - A	32,428	23.3%	17,524	30.3%	844	723	358
Migration-led 5yr - A	28,161	20.2%	14,797	25.7%	604	610	185
Migration-led 10yr X - A	25,174	18.1%	13,443	23.4%	482	555	133
Migration-led 10yr - A	19,669	14.1%	11,534	20.1%	308	476	37
Net Nil - A	10,901	7.8%	8,788	15.3%	0	362	-66
Natural Change - A	10,776	7.7%	8,401	14.6%	0	347	-167

East Hertfordshire

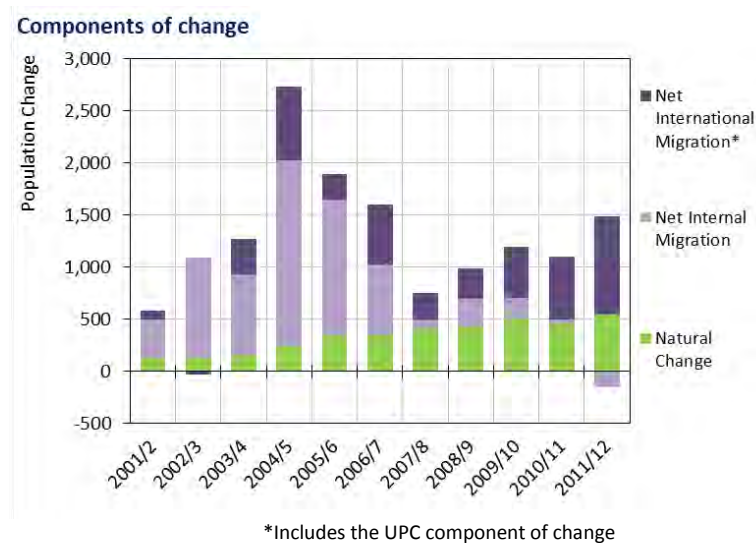
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	48,665	34.9%	24,641	42.8%	1,251	1,016	540
Employed people - B	44,323	31.8%	22,943	39.9%	1,115	946	465
Migration-led 5yr X - B	33,554	24.1%	18,576	32.3%	774	766	277
SNPP-2010 - B	32,428	23.3%	19,364	33.4%	844	799	358
Migration-led 5yr - B	28,161	20.2%	16,612	28.9%	604	685	185
Migration-led 10yr X - B	25,174	18.1%	15,245	26.5%	482	629	133
Migration-led 10yr - B	19,669	14.1%	13,217	23.0%	308	545	37
Net Nil - B	10,901	7.8%	10,262	17.8%	0	423	-66
Natural Change - B	10,776	7.7%	9,933	17.3%	0	410	-167

Welwyn Hatfield – scenario summary

- 4.152 Natural change has had an increasingly positive impact upon population growth since 2001/02. Growth through internal migration has varied significantly, with relatively high net in-migration to 2006/07, reducing to a net loss in 2011/12. Over the course of the 2001-2012 period international migration is estimated to have contributed an increasing amount to annual population growth.



- 4.153 The 'SNPP-2010' scenario suggests 34.2% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are both higher and lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 46.3%, whereas the 'Migration-led 5yr' scenario records a population increase of 32.1%, reflecting lower net migration impacts in the later years of the last decade.
- 4.154 The EEFM 'Jobs' and 'Employed people' scenarios imply a population increase that is lower than the 'Migration-led 10yr' scenario but higher than the 'SNPP-2010' and 'Migration-led 5yr' alternatives. Population growth estimated by these scenarios is 36.3%-40.7% over the forecast period.
- 4.155 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is substantially higher. The 'Migration-led 10yr – X' scenario records a growth of 68.7%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 50.6%, reflecting

the differential impact of the UPC component upon historical population change.

- 4.156 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 10.6% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a slightly higher growth, with a 12.2% increase over the forecast period.
- 4.157 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 4.9% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.158 Considering the average of the A and B alternatives, suggests a dwelling requirement of 686-759 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 742 dwellings per year. The two 'Migration-led' scenarios record a wider range of outcomes reflecting the impact of 5yr and 10yr migration assumptions, 611-832 dwellings per year.
- 4.159 The 'X' scenarios suggest much higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 1,320-1,956 per year.

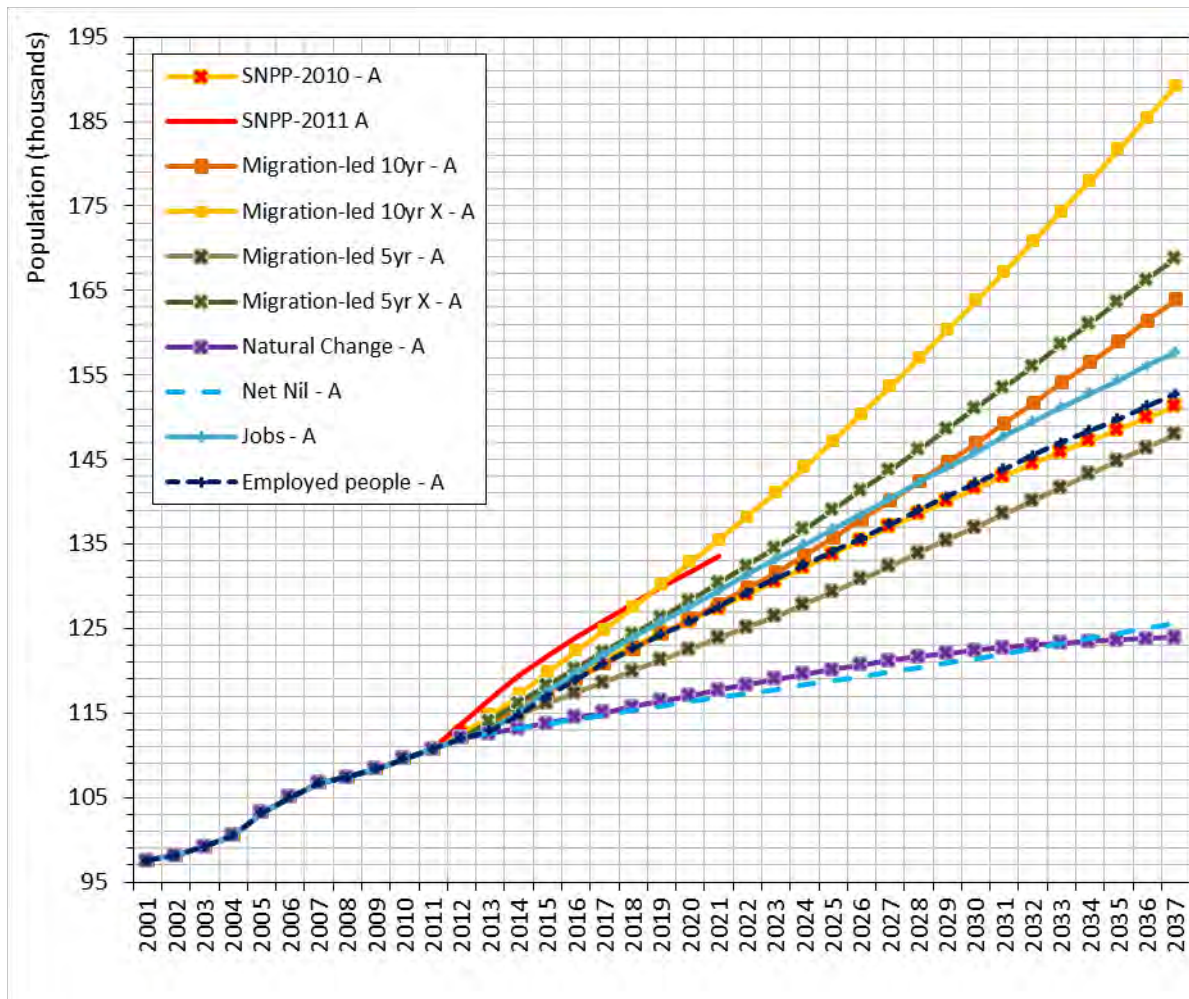
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 10yr X	1,165	1,224	1,195
Migration-led 5yr X	888	930	909
Migration-led 10yr	810	854	832
Jobs	742	776	759
SNPP-2010	724	760	742
Employed people	670	702	686
Migration-led 5yr	596	626	611
Natural Change	428	443	435
Net Nil	137	158	147

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Welwyn Hatfield

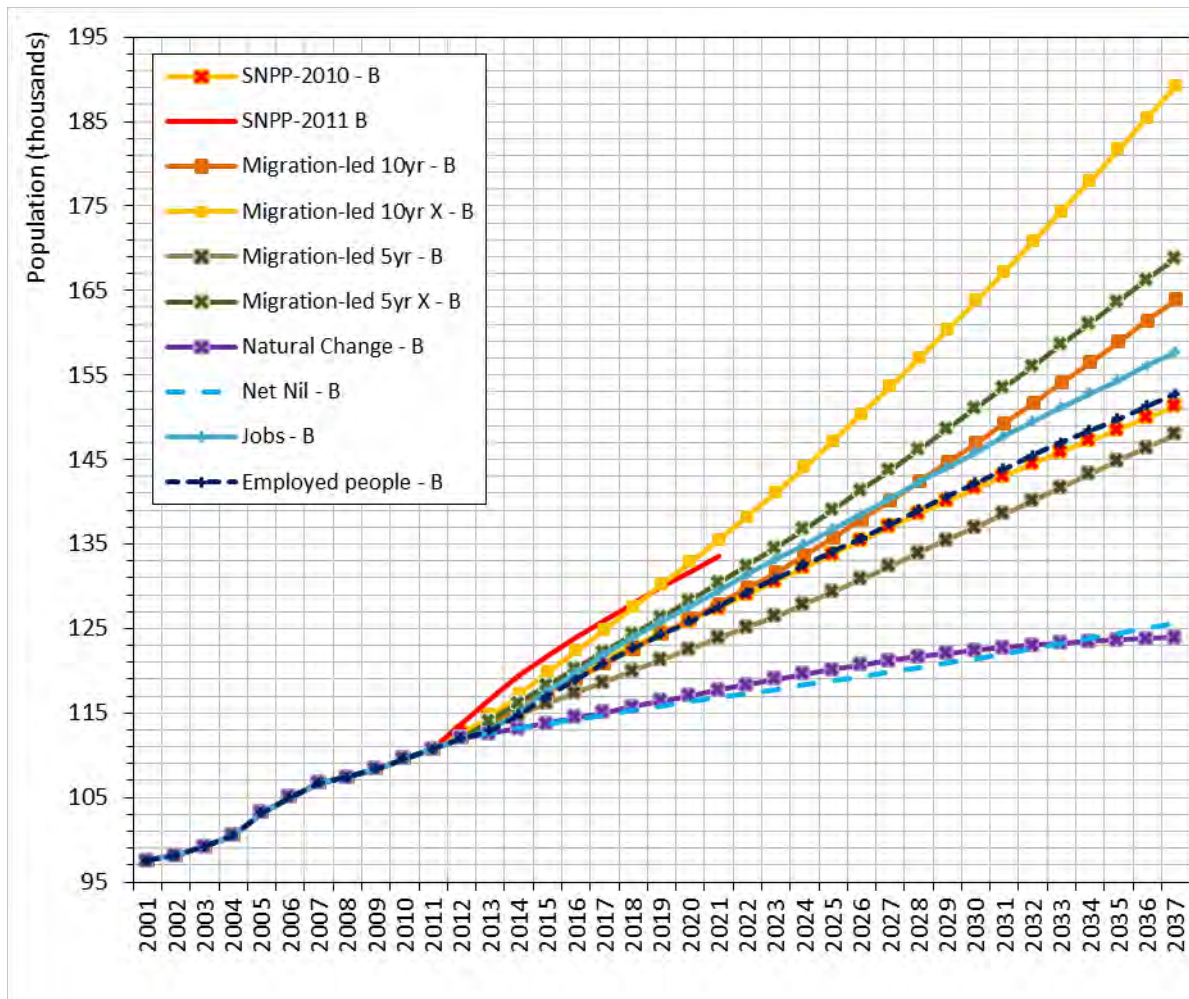
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr X - A	77,200	68.9%	27,901	63.2%	1,949	1,165	1,967
Migration-led 5yr X - A	56,837	50.7%	21,274	48.2%	1,388	888	1,328
Migration-led 10yr - A	51,875	46.3%	19,400	43.9%	1,158	810	1,270
Jobs - A	45,642	40.7%	17,766	40.2%	1,015	742	1,010
Employed people - A	40,713	36.3%	16,046	36.3%	863	670	879
SNPP-2010 - A	38,584	34.2%	17,349	39.5%	857	724	945
Migration-led 5yr - A	35,941	32.1%	14,277	32.3%	735	596	758
Net Nil - A	13,675	12.2%	3,284	7.4%	0	137	58
Natural Change - A	11,920	10.6%	10,239	23.2%	0	428	159

Welwyn Hatfield

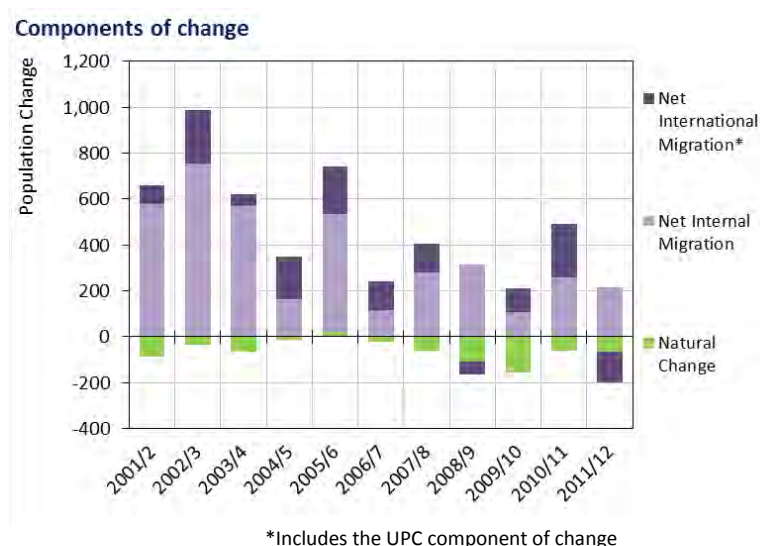
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr X - B	77,200	68.9%	29,311	66.2%	1,949	1,224	1,967
Migration-led 5yr X - B	56,837	50.7%	22,278	50.3%	1,388	930	1,328
Migration-led 10yr - B	51,875	46.3%	20,451	46.2%	1,158	854	1,270
Jobs - B	45,642	40.7%	18,579	41.9%	1,015	776	1,010
Employed people - B	40,713	36.3%	16,800	37.9%	863	702	879
SNPP-2010 - B	38,584	34.2%	18,205	41.2%	857	760	945
Migration-led 5yr - B	35,941	32.1%	14,989	33.8%	735	626	758
Net Nil - B	13,675	12.2%	3,777	8.5%	0	158	58
Natural Change - B	11,920	10.6%	10,604	23.9%	0	443	159

Babergh – scenario summary

- 4.160 Natural change has had a negative effect upon population growth since 2001/02. Growth through internal migration has been consistently positive, although the net increase has reduced over the 2001-2012 time period. Over the course of the 2001-2012 period international migration has contributed positively to population growth.



- 4.161 The 'SNPP-2010' scenario suggests 12.4% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 7.1%, whereas the 'Migration-led 5yr' scenario records a population increase of just 1.5%, reflecting lower net migration impacts in the later years of the last decade.
- 4.162 The EEFM 'Jobs' and 'Employed people' scenarios imply a higher population increase driven by anticipated jobs growth. Population growth estimated by these scenarios is 24.1%-25.0% over the forecast period.
- 4.163 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 3.5%, whereas the 'Migration-led 5yr – X' scenario records a population decline of -2.3%, reflecting the differential impact of the UPC component upon historical population change.

- 4.164 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a -2.5% population decline to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a greater population decrease, with a -9.3% decline over the forecast period.
- 4.165 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 4.3% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.166 Considering the average of the A and B alternatives, suggests a dwelling requirement of 510-524 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 330 dwellings per year. The two 'Migration-led' scenarios record a wider range of outcomes reflecting the impact of 5yr and 10yr migration assumptions, 171-232 dwellings per year.
- 4.167 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 120-183 per year.

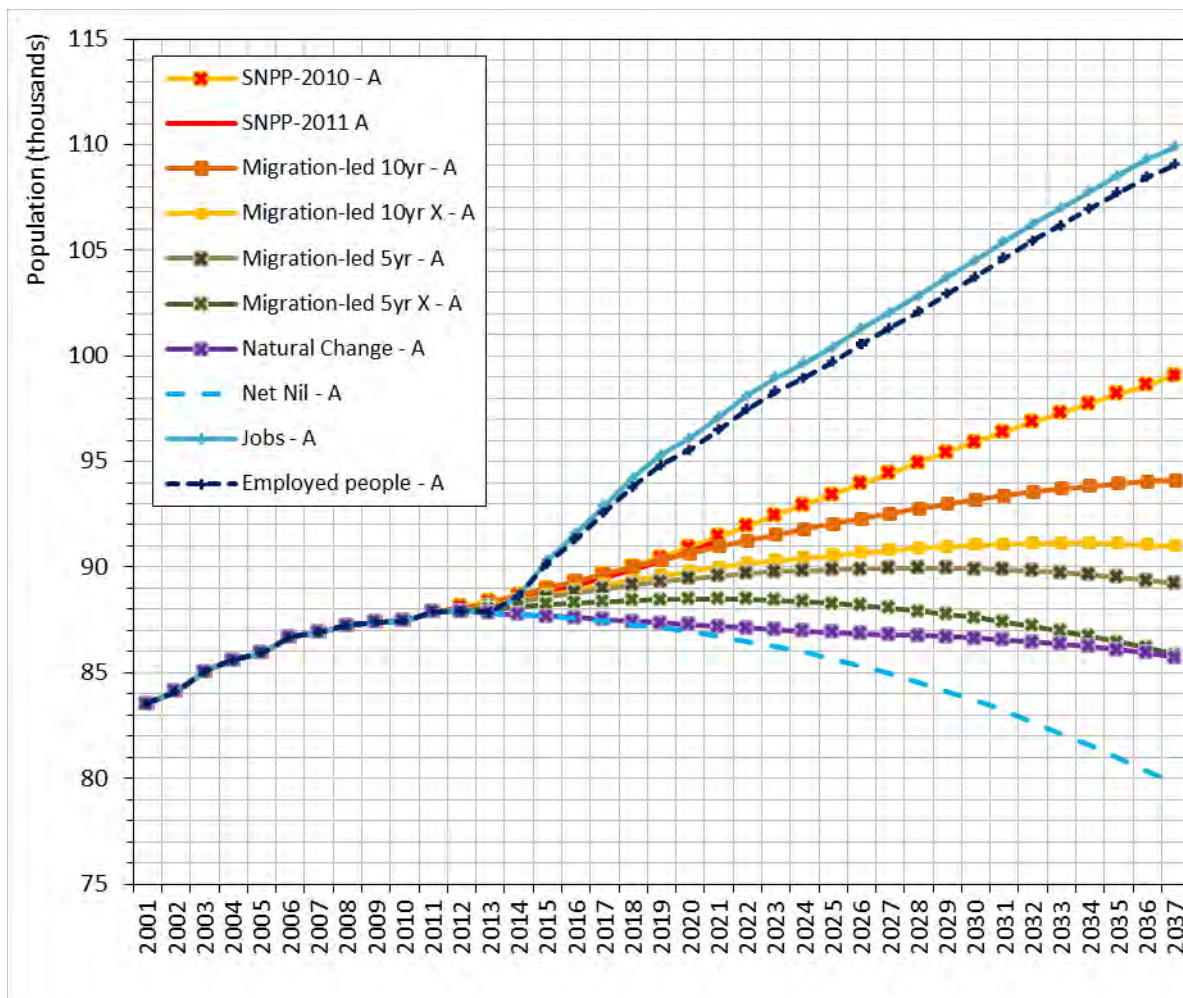
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	516	532	524
Employed people	502	518	510
SNPP-2010	321	339	330
Migration-led 10yr	226	238	232
Migration-led 10yr X	178	189	183
Migration-led 5yr	167	175	171
Migration-led 5yr X	117	123	120
Natural Change	27	52	40
Net Nil	35	37	36

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Babergh

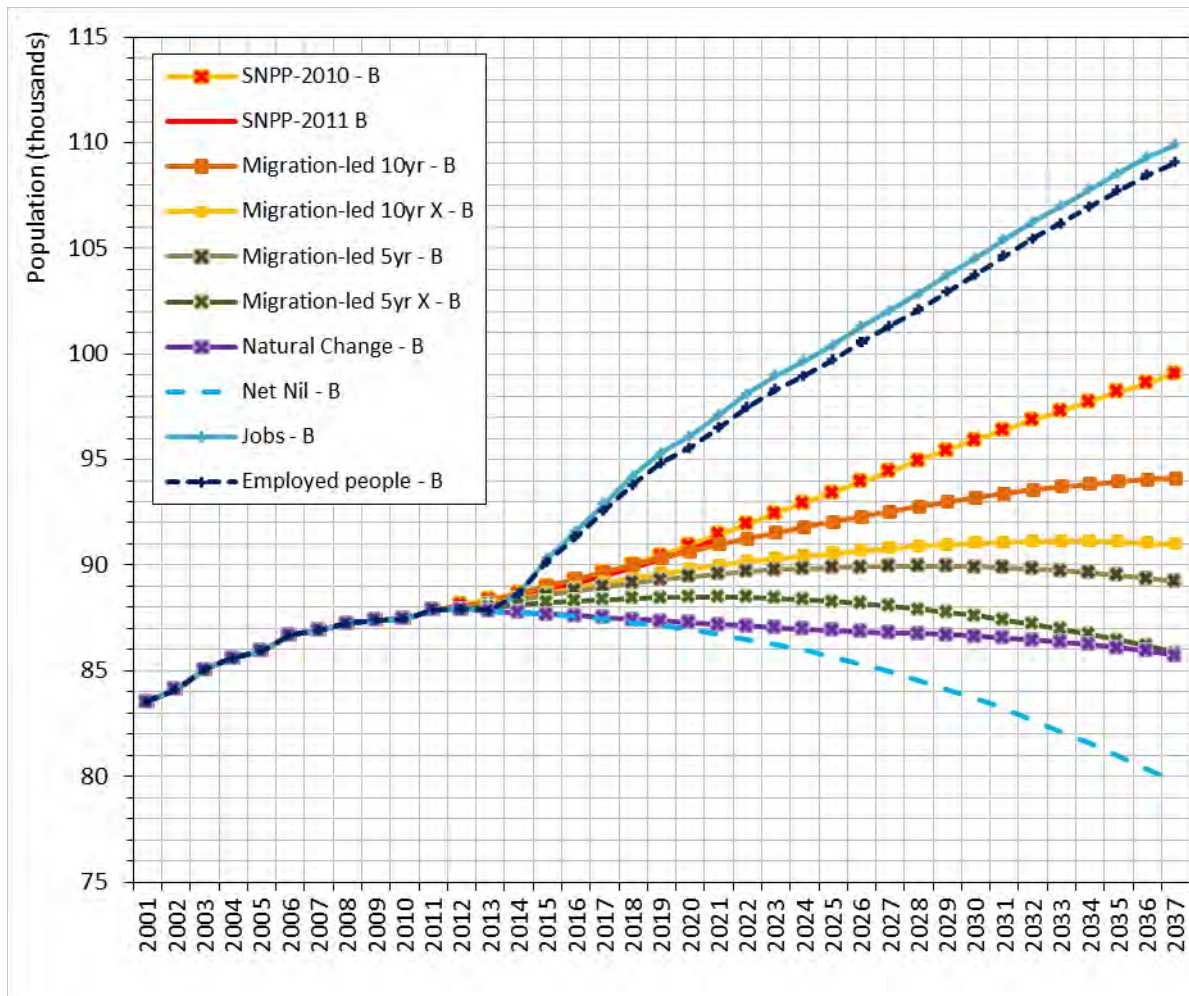
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	21,994	25.0%	12,409	32.8%	1,110	516	85
Employed people - A	21,159	24.1%	12,071	31.9%	1,081	502	72
SNPP-2010 - A	10,947	12.4%	7,717	20.3%	755	321	-5
Migration-led 10yr - A	6,206	7.1%	5,425	14.3%	484	226	-135
Migration-led 10yr X - A	3,065	3.5%	4,279	11.3%	374	178	-190
Migration-led 5yr - A	1,290	1.5%	4,022	10.6%	358	167	-248
Migration-led 5yr X - A	-2,050	-2.3%	2,802	7.4%	240	117	-305
Natural Change - A	-2,181	-2.5%	659	1.7%	0	27	-211
Net Nil - A	-8,210	-9.3%	842	2.2%	0	35	-337

Babergh

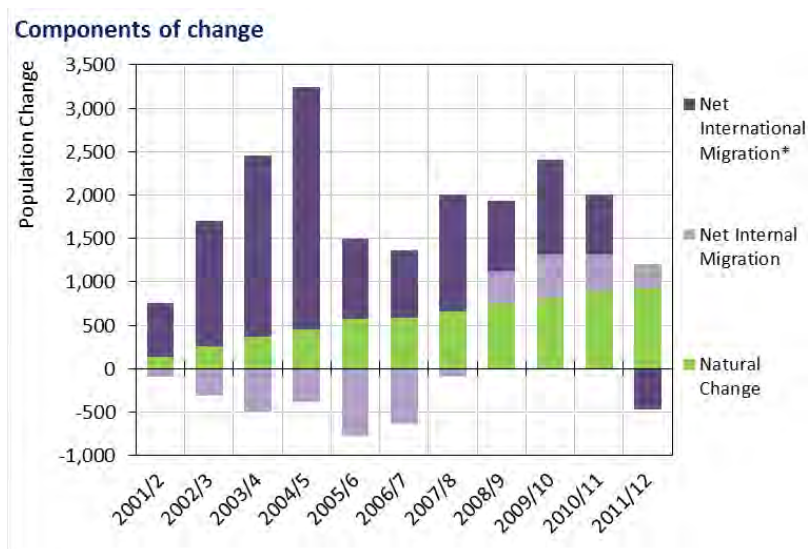
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	21,994	25.0%	12,789	33.8%	1,110	532	85
Employed people - B	21,159	24.1%	12,447	32.9%	1,081	518	72
SNPP-2010 - B	10,947	12.4%	8,147	21.4%	755	339	-5
Migration-led 10yr - B	6,206	7.1%	5,724	15.1%	484	238	-135
Migration-led 10yr X - B	3,065	3.5%	4,538	12.0%	374	189	-190
Migration-led 5yr - B	1,290	1.5%	4,217	11.1%	358	175	-248
Migration-led 5yr X - B	-2,050	-2.3%	2,956	7.8%	240	123	-305
Natural Change - B	-2,181	-2.5%	1,261	3.3%	0	52	-211
Net Nil - B	-8,210	-9.3%	899	2.4%	0	37	-337

Ipswich – scenario summary

- 4.168 Natural change has had an increasingly positive impact upon population growth since 2001/02. Growth through internal migration has varied significantly, with a net loss experienced to 2006/07 and a net gain thereafter. Over the course of the 2001-2012 period international migration is estimated to have contributed significantly to annual population growth, although a net loss has been estimated for 2011/12.



*Includes the UPC component of change

- 4.169 The 'SNPP-2010' scenario suggests 19.7% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are significantly higher than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 39.6%, whereas the 'Migration-led 5yr' scenario records a population increase 38.9%, reflecting marginally lower net migration impacts in the later years of the last decade.
- 4.170 The EEFM 'Jobs' and 'Employed people' scenarios imply a population increase driven by anticipated jobs growth that is lower than the 'Migration-led' alternatives. Population growth estimated by these scenarios is 22.0%-24.2% over the forecast period.
- 4.171 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 26.7%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 26.6%, reflecting the

differential impact of the UPC component upon historical population change.

- 4.172 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a 11.7% population growth to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a more significant population change, with a 19.7% increase over the forecast period.
- 4.173 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 9.2% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.174 Considering the average of the A and B alternatives, suggests a dwelling requirement of 668-717 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 638 dwellings per year. The two 'Migration-led' scenarios record a wider range of outcomes reflecting the impact of 5yr and 10yr migration assumptions, 1,058-1,097 dwellings per year.
- 4.175 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 779-802 per year.

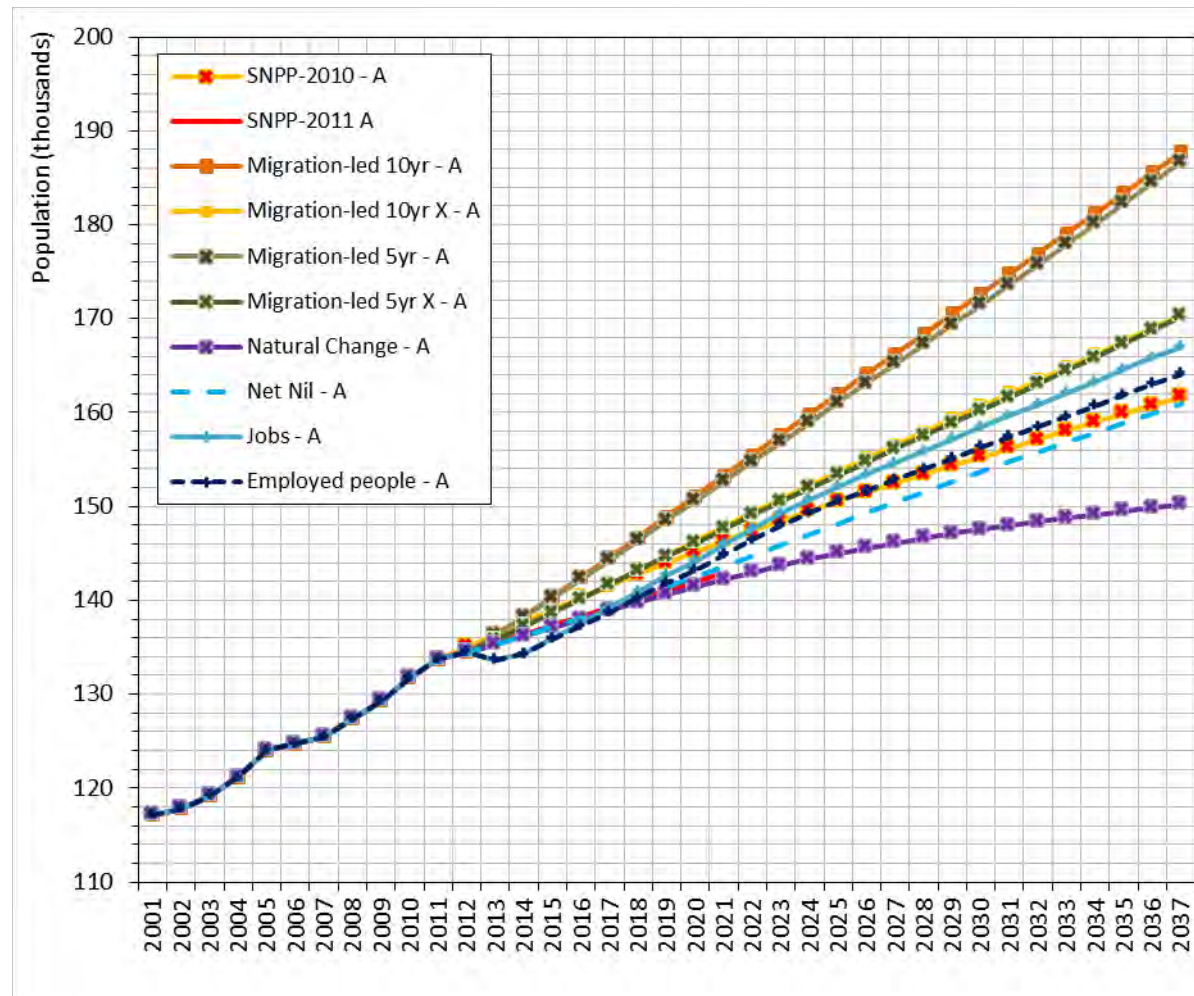
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 10yr	1,064	1,130	1,097
Migration-led 5yr	1,021	1,095	1,058
Migration-led 10yr X	766	838	802
Migration-led 5yr X	739	818	779
Jobs	679	756	717
Employed people	629	706	668
SNPP-2010	608	668	638
Net Nil	556	625	590
Natural Change	447	528	488

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Ipswich

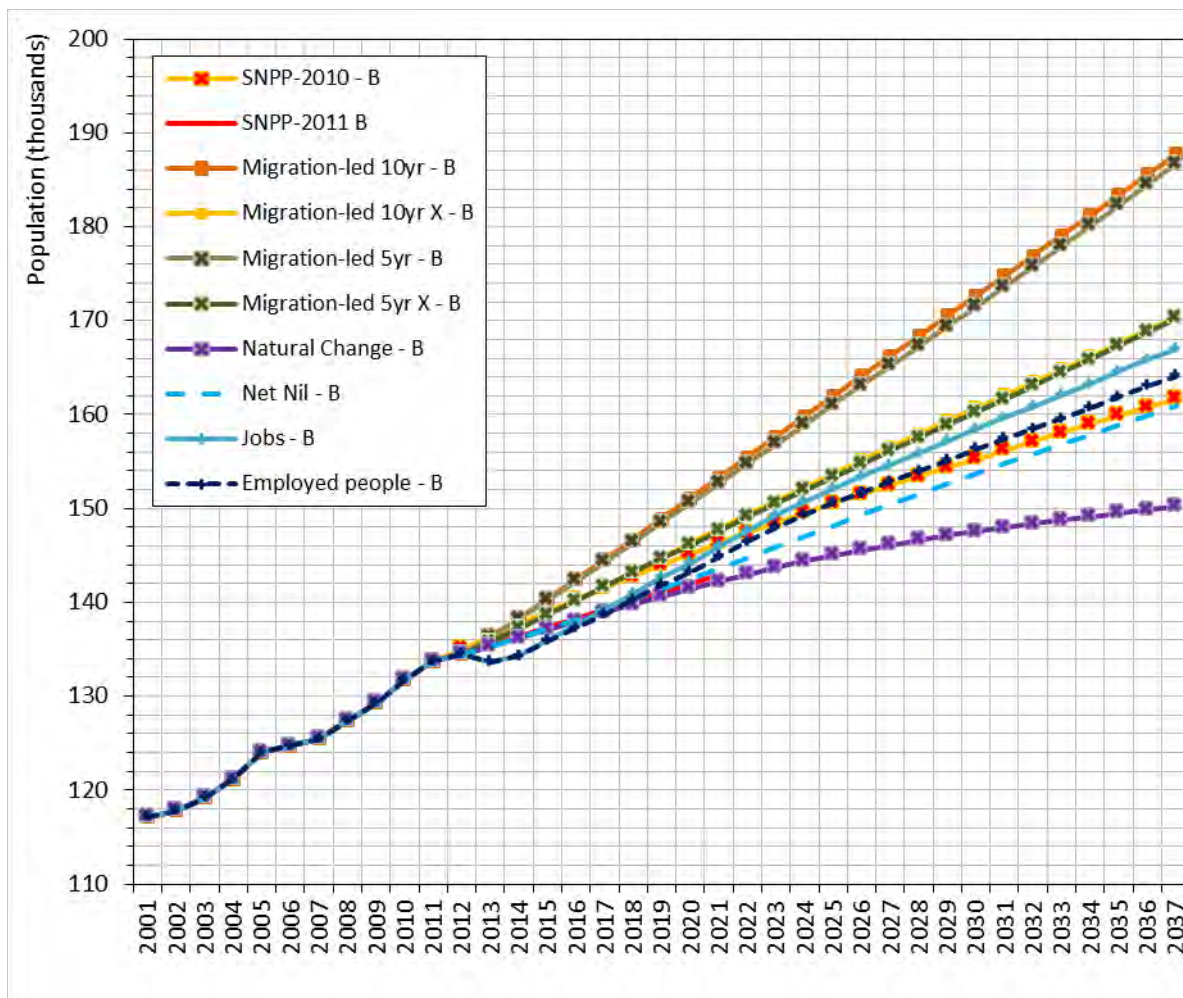
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr - A	53,259	39.6%	25,694	44.4%	989	1,064	1,061
Migration-led 5yr - A	52,298	38.9%	24,655	42.6%	1,009	1,021	1,028
Migration-led 10yr X - A	35,902	26.7%	18,506	32.0%	448	766	651
Migration-led 5yr X - A	35,777	26.6%	17,862	30.8%	483	739	640
Jobs - A	32,545	24.2%	16,399	28.3%	379	679	565
Employed people - A	29,646	22.0%	15,189	26.2%	288	629	499
SNPP-2010 - A	26,665	19.7%	14,698	25.0%	190	608	497
Net Nil - A	26,487	19.7%	13,425	23.2%	0	556	372
Natural Change - A	15,763	11.7%	10,788	18.6%	0	447	131

Ipswich

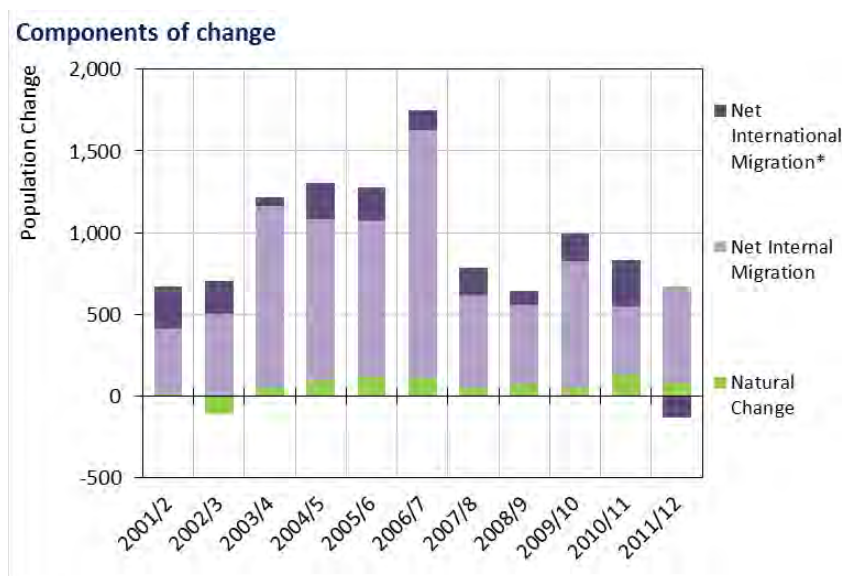
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr - B	53,259	39.6%	27,294	47.1%	989	1,130	1,061
Migration-led 5yr - B	52,298	38.9%	26,454	45.6%	1,009	1,095	1,028
Migration-led 10yr X - B	35,902	26.7%	20,230	34.9%	448	838	651
Migration-led 5yr X - B	35,777	26.6%	19,753	34.1%	483	818	640
Jobs - B	32,545	24.2%	18,252	31.5%	379	756	565
Employed people - B	29,646	22.0%	17,063	29.4%	288	706	499
SNPP-2010 - B	26,665	19.7%	16,139	27.5%	190	668	497
Net Nil - B	26,487	19.7%	15,086	26.0%	0	625	372
Natural Change - B	15,763	11.7%	12,765	22.0%	0	528	131

Mid Suffolk – scenario summary

- 4.176 Natural change has had a small positive effect upon population growth since 2003/04. Growth through internal migration has been consistently positive, although the net increase has reduced since 2007/08. Over the course of the 2001-2012 period international migration has contributed positively to population growth, with the exception of the latest year 2011/12.



*Includes the UPC component of change

- 4.177 The 'SNPP-2010' scenario suggests 21.5% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are both higher and lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 26.1%, whereas the 'Migration-led 5yr' scenario records a population increase of just 17.4%, reflecting lower net migration impacts in the later years of the last decade.
- 4.178 The EEFM 'Jobs' and 'Employed people' scenarios imply a higher population increase driven by anticipated jobs growth. Population growth estimated by these scenarios is 27.6%-29.6% over the forecast period.
- 4.179 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 21.8%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 12.4%, reflecting the differential impact of the UPC component upon historical population change.

- 4.180 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a small 0.2% population increase to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a population decline, with a -6.1% decrease over the forecast period.
- 4.181 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 4.8% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.182 Considering the average of the A and B alternatives, suggests a dwelling requirement of 582-615 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 524 dwellings per year. The two 'Migration-led' scenarios record a wider range of outcomes reflecting the impact of 5yr and 10yr migration assumptions, 416-559 dwellings per year.
- 4.183 The 'X' scenarios suggest much higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 343-496 per year.

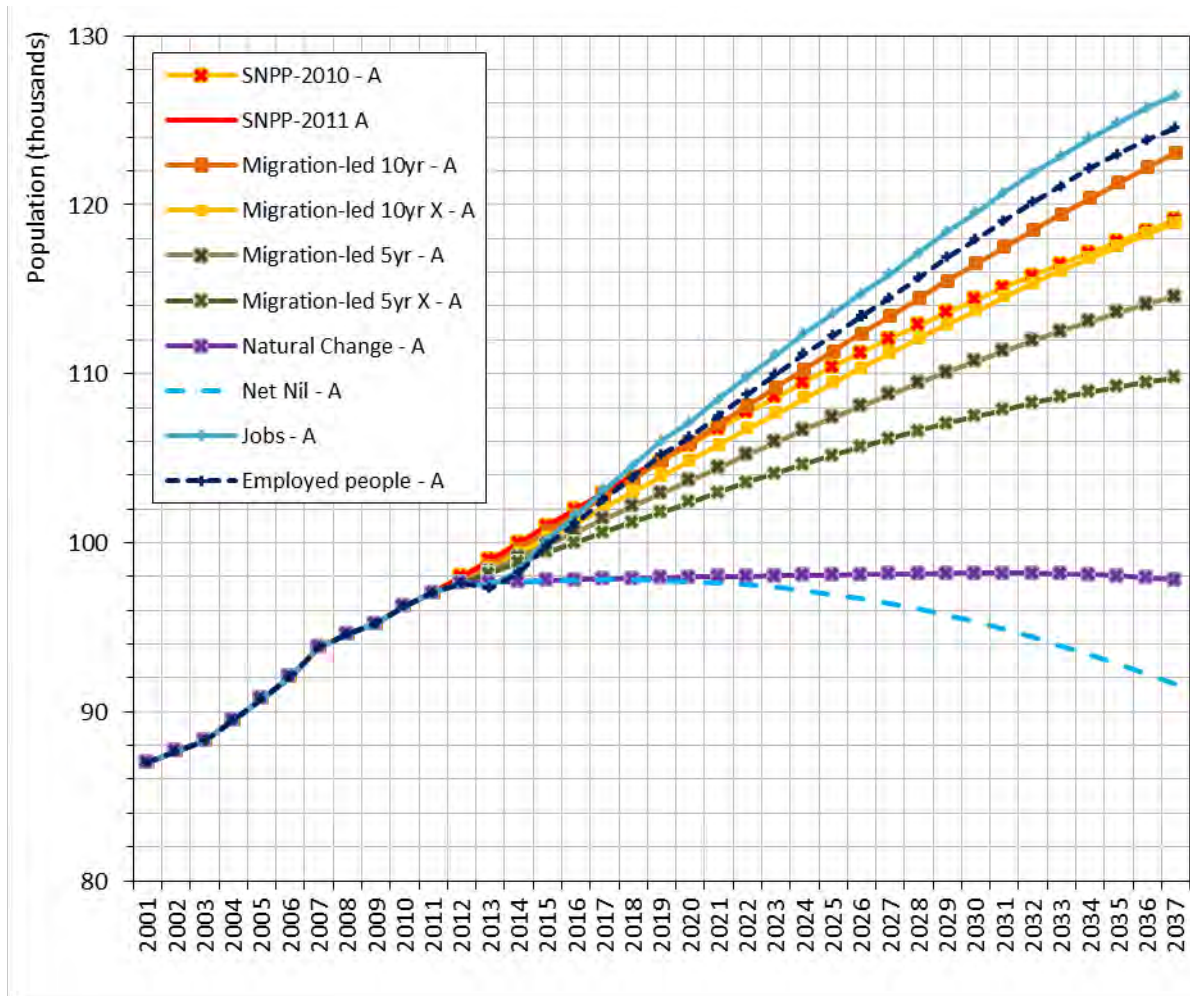
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	602	628	615
Employed people	570	595	582
Migration-led 10yr	547	572	559
SNPP-2010	511	537	524
Migration-led 10yr X	485	507	496
Migration-led 5yr	406	427	416
Migration-led 5yr X	333	352	343
Net Nil	104	118	111
Natural Change	74	95	84

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Mid Suffolk

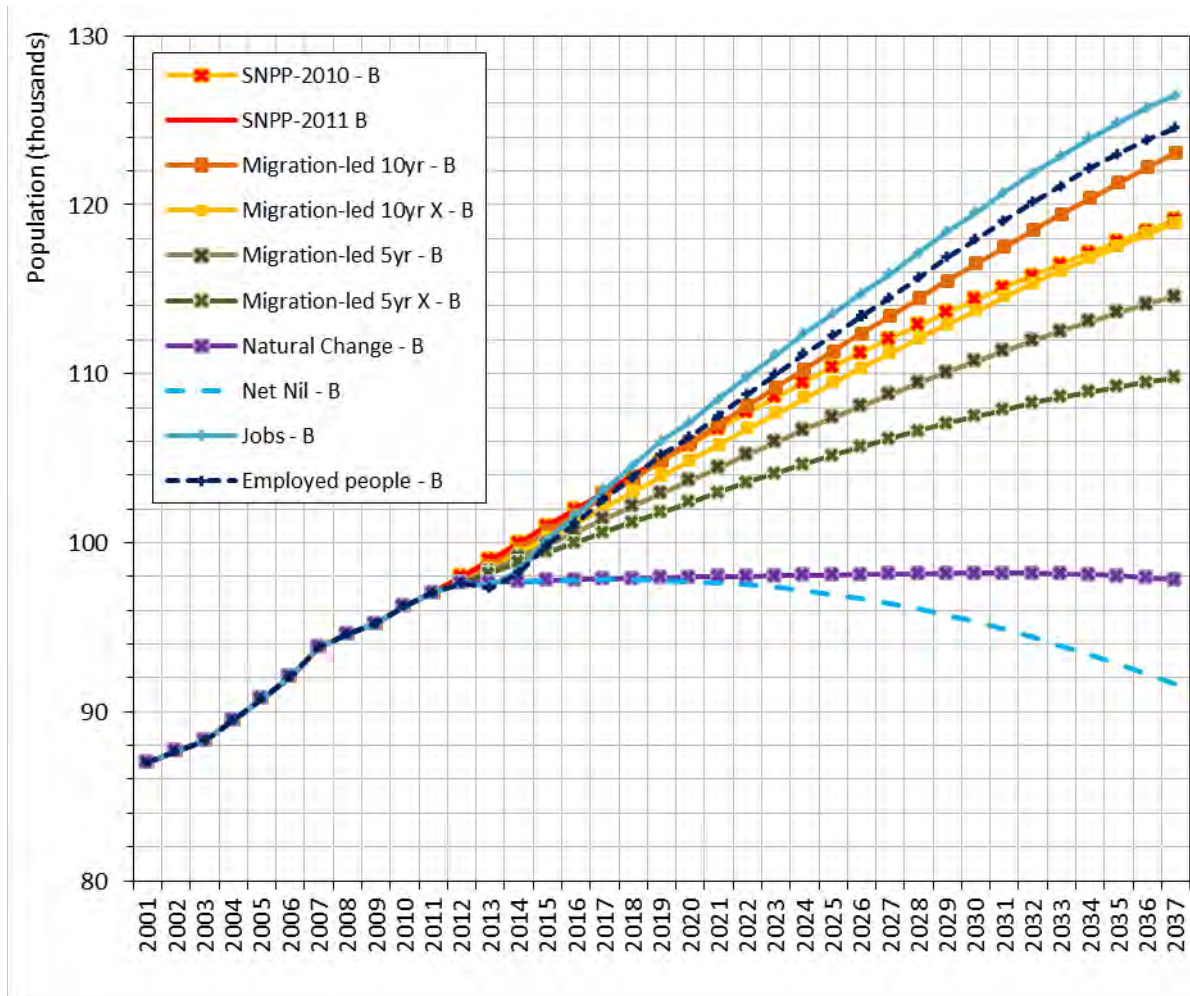
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	28,894	29.6%	14,472	35.4%	1,160	602	197
Employed people - A	26,941	27.6%	13,695	33.5%	1,093	570	164
Migration-led 10yr - A	25,468	26.1%	13,146	32.2%	1,043	547	141
Migration-led 10yr X - A	21,311	21.8%	11,651	28.5%	902	485	66
SNPP-2010 - A	21,043	21.5%	12,276	29.6%	1,007	511	116
Migration-led 5yr - A	16,979	17.4%	9,748	23.8%	742	406	-3
Migration-led 5yr X - A	12,142	12.4%	8,014	19.6%	576	333	-91
Natural Change - A	216	0.2%	1,778	4.3%	0	74	-221
Net Nil - A	-5,967	-6.1%	2,510	6.1%	0	104	-347

Mid Suffolk

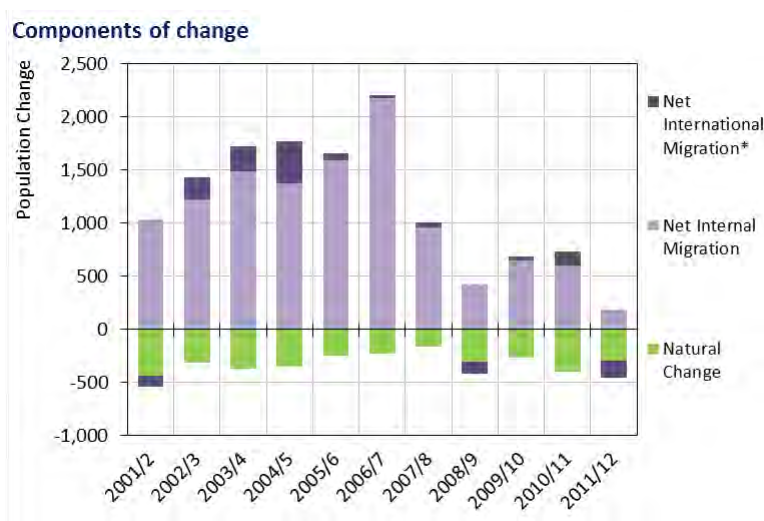
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	28,894	29.6%	15,092	36.9%	1,160	628	197
Employed people - B	26,941	27.6%	14,300	35.0%	1,093	595	164
Migration-led 10yr - B	25,468	26.1%	13,739	33.6%	1,043	572	141
Migration-led 10yr X - B	21,311	21.8%	12,195	29.8%	902	507	66
SNPP-2010 - B	21,043	21.5%	12,921	31.2%	1,007	537	116
Migration-led 5yr - B	16,979	17.4%	10,262	25.1%	742	427	-3
Migration-led 5yr X - B	12,142	12.4%	8,473	20.7%	576	352	-91
Natural Change - B	216	0.2%	2,280	5.6%	0	95	-221
Net Nil - B	-5,967	-6.1%	2,834	6.9%	0	118	-347

Suffolk Coastal – scenario summary

- 4.184 Natural change has had a consistently negative effect upon population growth since 2001/02. Growth through internal migration has been consistently positive, although the net increase has reduced significantly since 2006/07. Over the course of the 2001-2012 period international migration has, on average, made a small positive contribution to population growth.



*Includes the UPC component of change

- 4.185 The 'SNPP-2010' scenario suggests 21.5% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are lower than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 16.2%, whereas the 'Migration-led 5yr' scenario records a marginal population increase of just 0.9%, reflecting significantly lower net migration impacts in the later years of the last decade.
- 4.186 The EEFM 'Jobs' and 'Employed people' scenarios imply a higher population increase driven by anticipated jobs growth. Population growth estimated by these scenarios is 36.7%-39.3% over the forecast period.
- 4.187 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is increased. The 'Migration-led 10yr – X' scenario records a growth of 17.6%, whereas the 'Migration-led 5yr – X' scenario records a population increase of 1.0%, reflecting the differential impact of the UPC component upon historical population change.

- 4.188 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a -4.9% population increase to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, also produces a population decline, with a -13.6% decrease over the forecast period.
- 4.189 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 14.0% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.190 Considering the average of the A and B alternatives, suggests a dwelling requirement of 911-967 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 706 dwellings per year. The two 'Migration-led' scenarios record a wider range of outcomes reflecting the impact of 5yr and 10yr migration assumptions, 142-485 dwellings per year.
- 4.191 The 'X' scenarios suggest higher dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 143-513 per year.

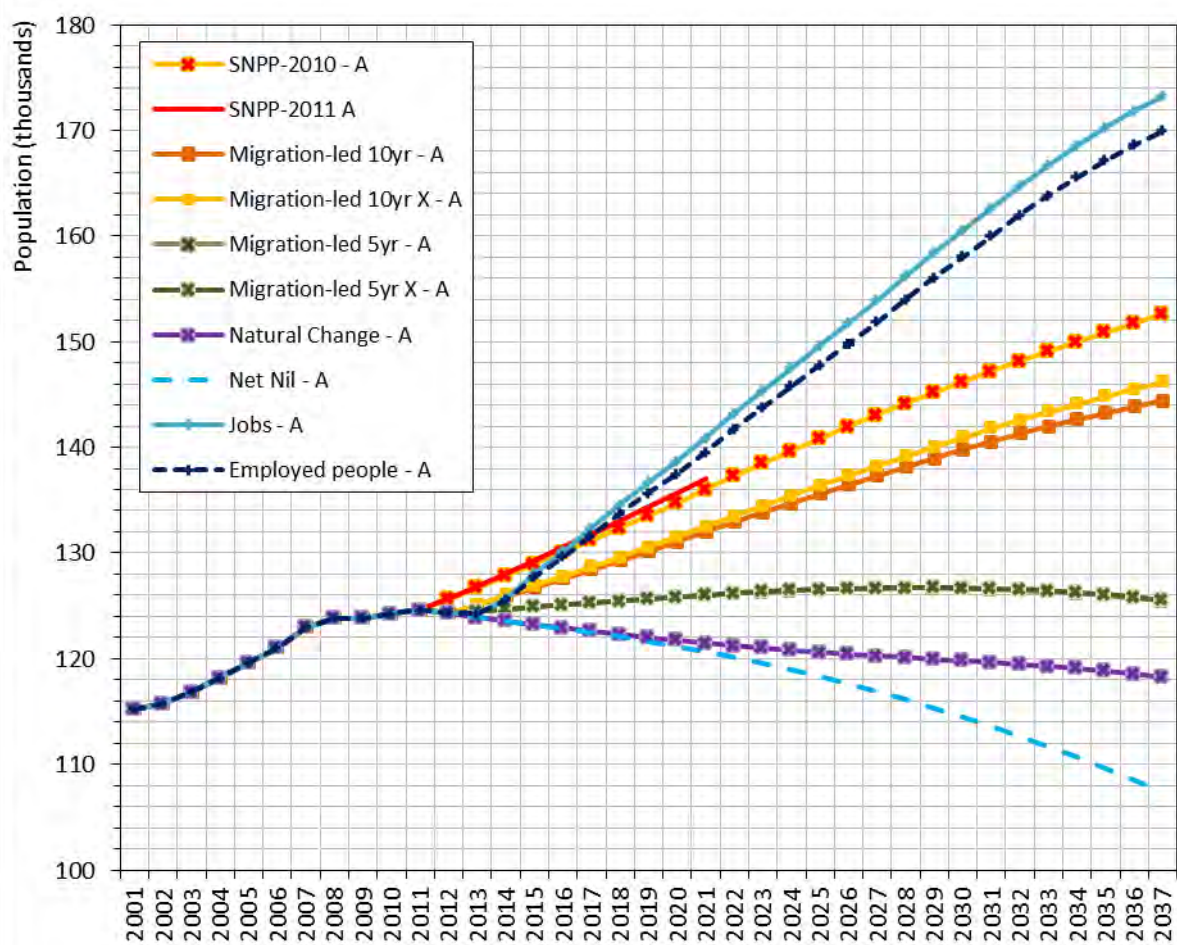
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Jobs	923	1,011	967
Employed people	868	955	911
SNPP-2010	668	743	706
Migration-led 10yr X	477	548	513
Migration-led 10yr	450	521	485
Migration-led 5yr X	115	172	143
Migration-led 5yr	113	171	142
Net Nil	-84	-36	-60
Natural Change	-119	-55	-87

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

Suffolk Coastal

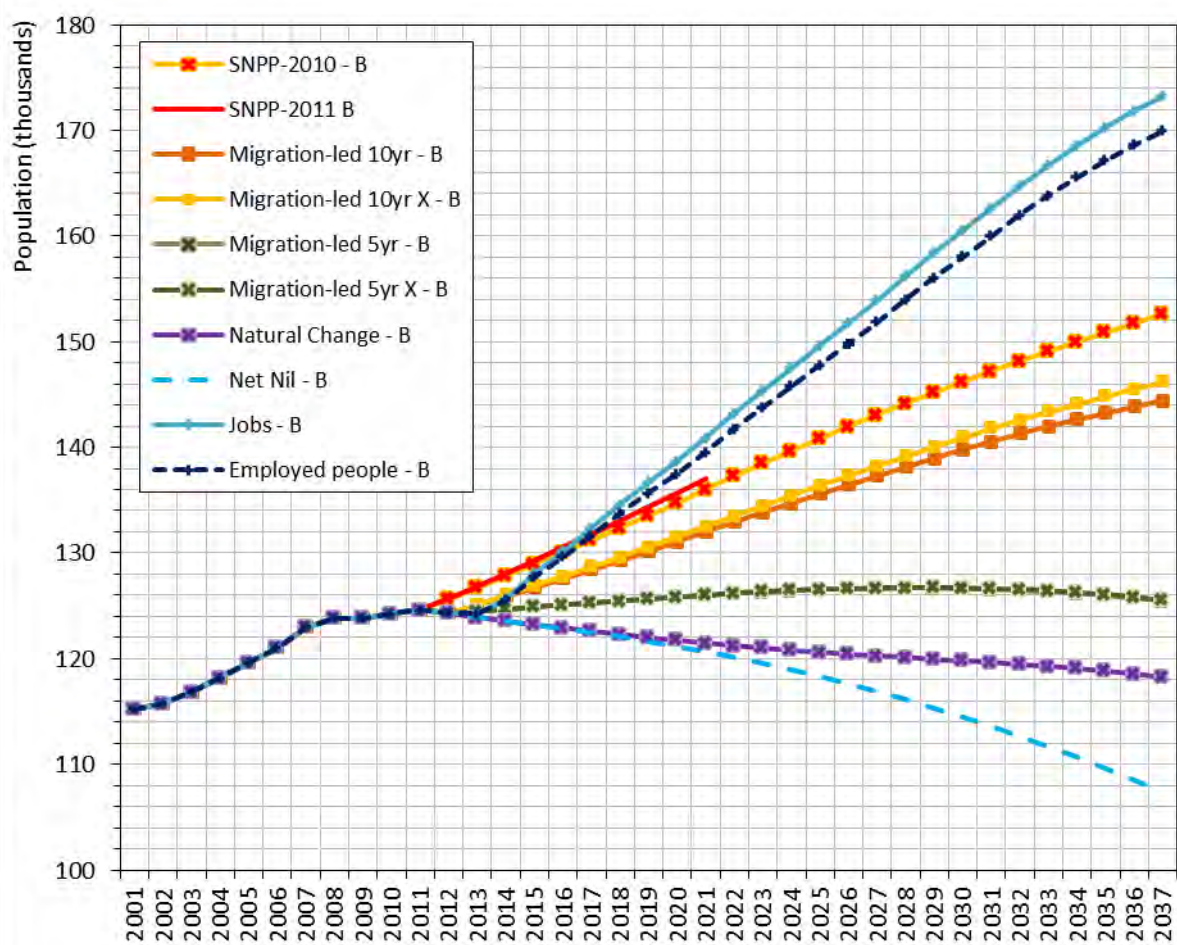
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - A	48,918	39.3%	21,187	39.3%	2,301	923	461
Employed people - A	45,658	36.7%	19,931	37.0%	2,187	868	404
SNPP-2010 - A	27,023	21.5%	15,328	28.0%	1,579	668	172
Migration-led 10yr X - A	21,826	17.6%	10,950	20.3%	1,329	477	8
Migration-led 10yr - A	20,100	16.2%	10,339	19.2%	1,270	450	-25
Migration-led 5yr X - A	1,221	1.0%	2,631	4.9%	598	115	-369
Migration-led 5yr - A	1,148	0.9%	2,605	4.8%	596	113	-371
Natural Change - A	-6,064	-4.9%	-2,722	-5.0%	0	-119	-337
Net Nil - A	-16,936	-13.6%	-1,922	-3.6%	0	-84	-616

Suffolk Coastal

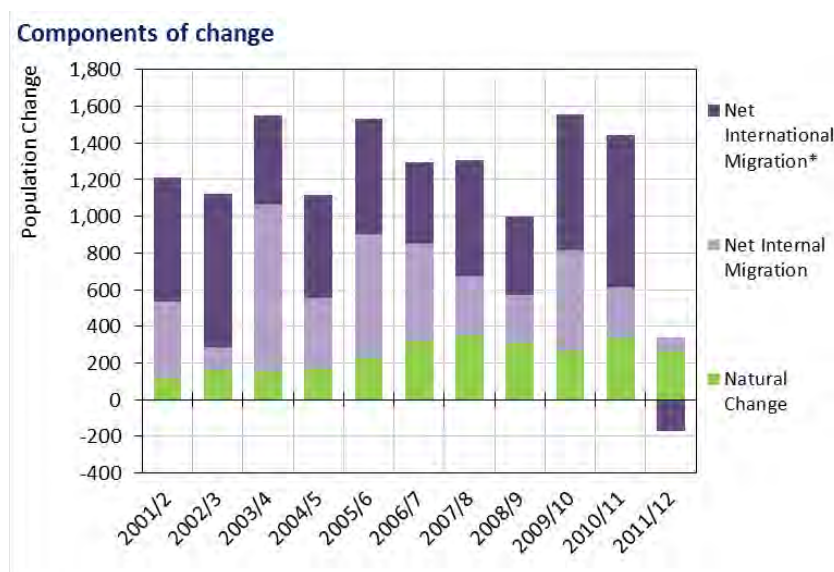
Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Jobs - B	48,918	39.3%	23,216	43.0%	2,301	1,011	461
Employed people - B	45,658	36.7%	21,914	40.6%	2,187	955	404
SNPP-2010 - B	27,023	21.5%	17,067	31.1%	1,579	743	172
Migration-led 10yr X - B	21,826	17.6%	12,584	23.3%	1,329	548	8
Migration-led 10yr - B	20,100	16.2%	11,949	22.1%	1,270	521	-25
Migration-led 5yr X - B	1,221	1.0%	3,957	7.3%	598	172	-369
Migration-led 5yr - B	1,148	0.9%	3,931	7.3%	596	171	-371
Natural Change - B	-6,064	-4.9%	-1,263	-2.3%	0	-55	-337
Net Nil - B	-16,936	-13.6%	-818	-1.5%	0	-36	-616

St Edmundsbury – scenario summary

4.192 Natural change has had an increasingly positive effect upon population growth since 2001/02. Growth through internal migration has been consistently positive, although the net increase has reduced since 2007/08. Over the course of the 2001-2012 period international migration has made a significantly positive contribution to population growth, with the exception of the latest year 2011/12.



*Includes the UPC component of change

4.193 The 'SNPP-2010' scenario suggests 16.2% population growth when extrapolated to 2037. Using the historical evidence on growth to set migration assumptions produces population forecasts that are higher than the 'SNPP-2010'. The 'Migration-led 10yr' scenario records a growth of 29.8%, whereas the 'Migration-led 5yr' scenario records a population increase of just 24.8%, reflecting lower net migration impacts in the later years of the last decade.

4.194 The EEFM 'Jobs' and 'Employed people' scenarios imply a population increase driven by anticipated jobs growth that is lower than the 'Migration-led' alternatives. Population growth estimated by these scenarios is 21.1%-22.3% over the forecast period.

4.195 If the UPC component of historical population change is ignored when calculating future migration assumptions, the forecast of population growth compared to the 'Migration-led' scenarios is reduced. The 'Migration-led 10yr – X' scenario records a growth of 12.6%, whereas

the 'Migration-led 5yr – X' scenario records a population increase of 8.5%, reflecting the differential impact of the UPC component upon historical population change.

- 4.196 The 'Natural Change' scenario, with no migration impact and with only births and deaths driving growth, results in a small 4.0% population increase to 2037. The 'Net-nil' scenario which maintains a migration inflow and outflow but applies a zero migration balance, produces a small population change, with a 1.4% increase over the forecast period.
- 4.197 The application of the 2008-based household formation rates (Option B) results in a dwelling requirement that is approximately 15.6% higher than that associated with the application of 2011-based household formation rates (Option A) (this calculation excludes the 'Natural Change' and 'Net Nil' scenarios).
- 4.198 Considering the average of the A and B alternatives, suggests a dwelling requirement of 522-544 per year resulting from the EEFM scenarios, with the 'SNPP-2010' suggesting growth at 456 dwellings per year. The two 'Migration-led' scenarios record higher dwelling outcomes, 593-696 dwellings per year.
- 4.199 The 'X' scenarios suggest lower dwelling growth than the 'Migration-led' scenarios which take account of UPC, in the range 308-394 per year.

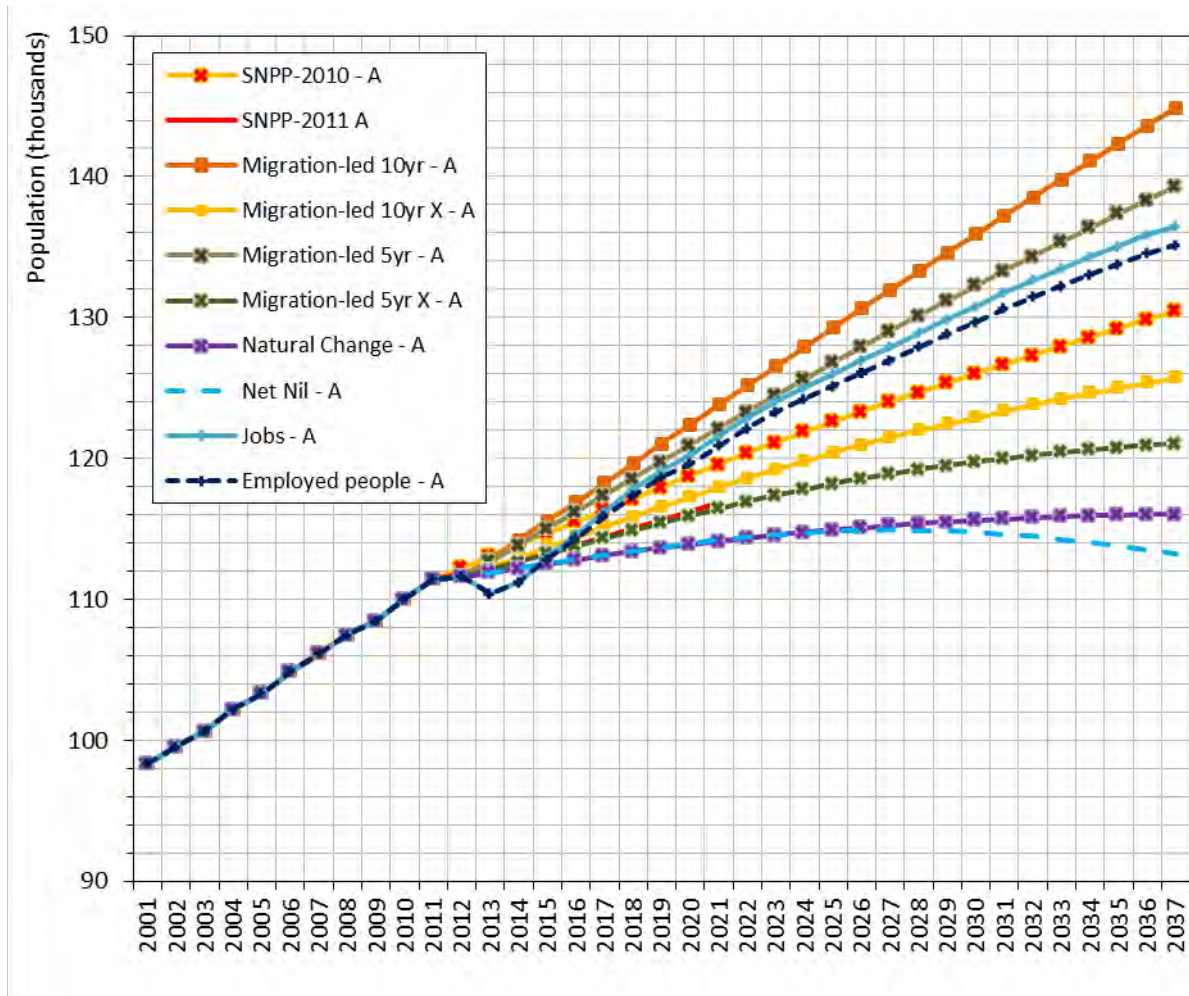
Scenario dwelling growth summary

Scenario	Average annual dwelling requirement, 2012-37		
	Option A	Option B	Average
Migration-led 10yr	657	734	696
Migration-led 5yr	555	630	593
Jobs	507	581	544
Employed people	485	559	522
SNPP-2010	419	494	456
Migration-led 10yr X	359	428	394
Migration-led 5yr X	275	341	308
Net Nil	209	256	233
Natural Change	164	231	197

Note: This project does not produce a recommended or preferred demographic forecast for any local authority area. Rather it presents a range of scenarios to inform further assessment and consideration by the individual local authorities. Indeed, local circumstances may dictate that certain scenarios are more appropriate than others for that local area. Nevertheless, for completeness all the scenarios are presented here.

St Edmundsbury

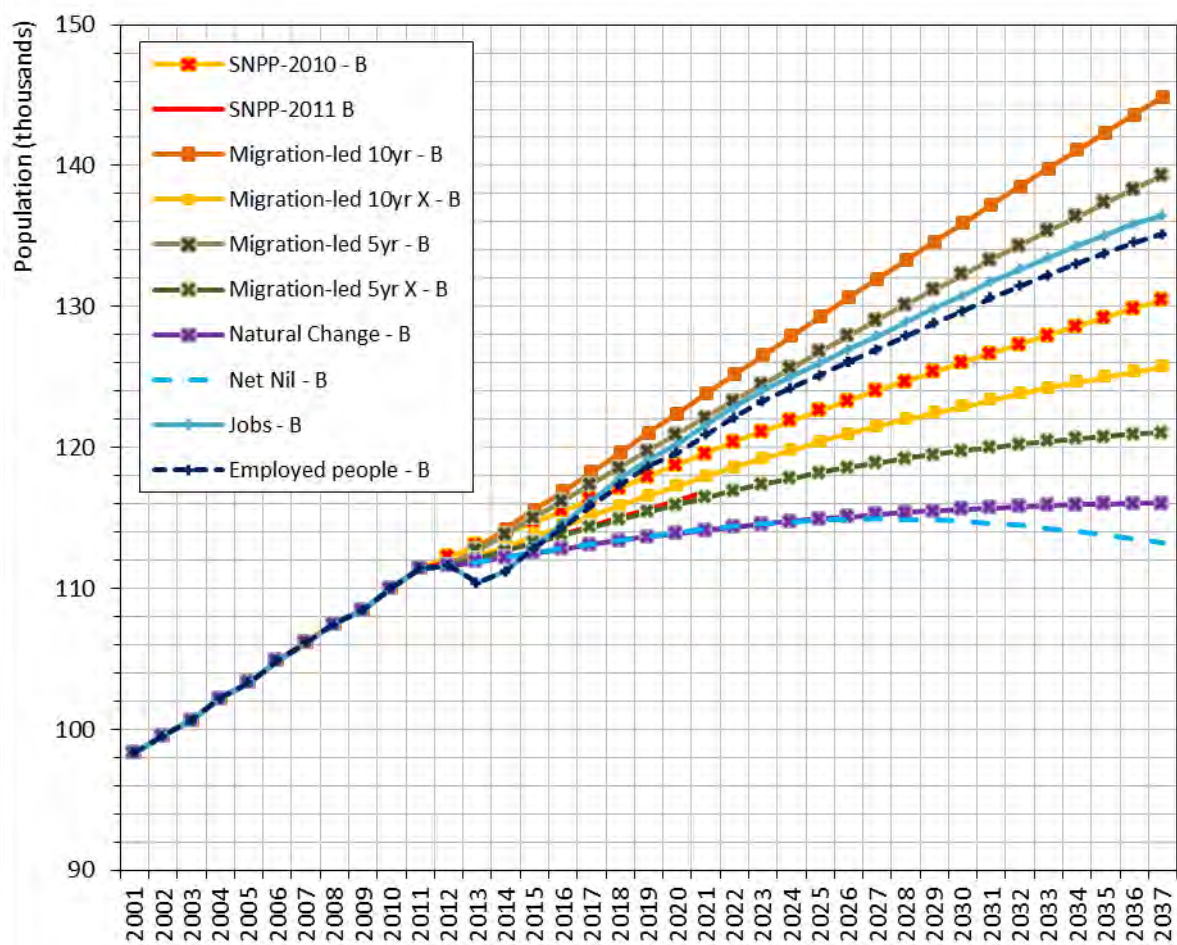
Option A: 2011-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr - A	33,263	29.8%	15,957	34.5%	1,093	657	457
Migration-led 5yr - A	27,715	24.8%	13,491	29.2%	895	555	318
Jobs - A	24,869	22.3%	12,316	26.7%	794	507	255
Employed people - A	23,538	21.1%	11,783	25.5%	750	485	227
SNPP-2010 - A	18,214	16.2%	10,179	21.7%	653	419	154
Migration-led 10yr X - A	14,101	12.6%	8,728	18.9%	448	359	24
Migration-led 5yr X - A	9,444	8.5%	6,671	14.4%	277	275	-86
Natural Change - A	4,436	4.0%	3,988	8.6%	0	164	-130
Net Nil - A	1,576	1.4%	5,070	11.0%	0	209	-184

St Edmundsbury

Option B: 2008-based CLG household model



Scenario	Change 2012 - 2037				Average per year		
	Population Change	Population Change %	Households Change	Households Change %	Net Migration	Dwellings	Jobs
Migration-led 10yr - B	33,263	29.8%	17,833	38.6%	1,093	734	457
Migration-led 5yr - B	27,715	24.8%	15,300	33.1%	895	630	318
Jobs - B	24,869	22.3%	14,119	30.5%	794	581	255
Employed people - B	23,538	21.1%	13,579	29.4%	750	559	227
SNPP-2010 - B	18,214	16.2%	11,997	25.5%	653	494	154
Migration-led 10yr X - B	14,101	12.6%	10,390	22.5%	448	428	24
Migration-led 5yr X - B	9,444	8.5%	8,280	17.9%	277	341	-86
Natural Change - B	4,436	4.0%	5,607	12.1%	0	231	-130
Net Nil - B	1,576	1.4%	6,230	13.5%	0	256	-184

5. Summary & Phase 6 intentions

Summary

- 5.1 The purpose of Phase 5 analysis has been to produce a consistent set of demographic forecast scenarios for EPOA members to consider; to enable local assessment and to inform policy development. It is not the intention of this Phase 5 report to produce a recommended or preferred demographic forecast for any area. Rather, the approach is to encourage examination of the demography of each area from different perspectives. It will be for each local planning authority to determine its use of the forecasts and other outputs from this project to inform its future spatial policy development.
- 5.2 Throughout each phase of this project, POPGROUP demographic forecasting models have been applied, ensuring a robustness of approach that is consistent with the methods used by ONS for population and household projections and which are now in common use by local authorities across the UK. In addition all data and assumptions have been presented in a transparent manner to enable the most effective interpretation of the issues and output under consideration.
- 5.3 The Phase 5 analysis has presented a large amount of new material for EPOA members to consider, updating the evidence from the previous phases of the project. This new information has included:
- Revised mid-year population estimates for 2002-2010 which change the historical migration data from which trend projections have been formulated;
 - The latest 2012 mid-year population estimate;
 - The latest 2011 Census economic activity rates;
 - An updated commuting ratio from the 2011 Census;
 - The latest EEFM employment forecasts;
 - Household formation assumptions from both the 2008-based and 2011-based CLG models.
- 5.4 With a 2012-2037 time horizon, a total of ten population growth scenarios have been presented

for each of the 24 local authority districts:

- ONS 2010-based and 2011-based projections
- Migration-led scenarios which consider a 5-year and 10-year history and which examine the impact of the UPC element of historical population change upon future growth trajectories
- Natural Change and Net-Nil scenarios
- Employment-led forecasts based upon total 'jobs' growth and the growth in 'employed people'

5.5 In considering the scenario evidence, there are a number of key issues that warrant particular scrutiny:

- The range of dwelling growth differences that result from the 2011-based and 2008-based household formation rates;
- The impact of the UPC component upon the 5-year and 10-year Migration-led scenario outcomes, which is a particular issue for those local authorities where the 2011 Census resulted in a substantial rebasing of the population;
- The impact of the anticipated jobs and employed people forecasts upon demographic change, particularly in relation to the combined effect of changing economic activity rates in older age-groups, local commuting ratios and the balancing effect of in and out-migration upon the resident labour force.

Phase 6

5.6 The next Phase of this project is scheduled for completion during July-August 2014.

5.7 This new Phase will incorporate an evaluation of the 2012-based sub-national projections from ONS, which are due to be released in Spring 2014. This evaluation will be particularly important given ONS' recent decision to ignore the UPC element in its long-term migration assumptions.

5.8 The household implications of the new ONS projection will be evaluated using both the 2008-based and 2011-based household formation rates.

-
- 5.9 Revised EEFM forecasts will be evaluated to assess the impact of anticipated jobs growth upon demographic change within each EPOA local authority.
- 5.10 Phase 6 will also include an assessment of complementary forecasts that have been formulated by the Greater London Authority (GLA) as part of its most recent Strategic Housing Market Assessment for London Boroughs.

6. Appendix: Data inputs & assumptions

- 6.1 The POPGROUP model 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 the historical data evidence for 2001-2012, in conjunction with information from ONS national projections, a series of assumptions have been derived which drive the scenario forecasts.
- 6.2 In the following sections, a narrative on the data inputs and assumptions underpinning the scenarios is presented.

Population, Births & Deaths

Population

- 6.3 In each scenario, historical population statistics are provided by the mid-year population estimates for 2001 to 2012, with all data recorded by single-year of age and sex.
- 6.4 These data include the revised mid-year population estimates for 2002–2010, which were released by the ONS in May 2013. The revised mid-year population estimates 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.
- 6.5 For the ‘SNPP-2010’ and ‘SNPP-2011’ scenarios, future population counts are provided for each area by single-year of age and sex, to ensure consistency with the trajectory of the official projections.
- 6.6 The ‘SNPP-2010’ scenario is scaled to ensure consistency with the 2011 mid-year population estimate total, following its designated growth trend thereafter. This enables the different scenario alternatives to be more easily compared and does not alter the underlying assumptions or growth trajectory.

Births & Fertility

- 6.7 Historical mid-year to mid-year counts of births by sex from 2001/02 to 2011/12 for each district have been sourced from ONS Vital Statistics.

- 6.8 A 'national' age-specific fertility rate (ASFR) schedule, which measures the expected fertility rates by age and sex for England in 2013/14, is included in the POPGROUP model assumptions. This is derived from the ONS 2012-based national population projection and is used in combination with a local (i.e. district-specific) fertility differential to produce age-specific fertility rates for each area.
- 6.9 Long-term assumptions on changes in age-specific fertility rates are taken from the ONS 2012-based national population projection for England.
- 6.10 In combination with the age-specific population data, these provide the basis for the calculation of births in each year of the forecast period.

Deaths & Mortality

- 6.11 Historical mid-year to mid-year counts of deaths by age and sex from 2001/02 to 2011/12 for each district have been sourced from ONS Vital Statistics.
- 6.12 A 'national' age-specific mortality rate (ASMR) schedule, which measures the expected mortality rates by age and sex for England in 2013/14, is included in the POPGROUP model assumptions. This is derived from the ONS 2012-based national population projection and is used in combination with a local (i.e. district-specific) mortality differential to produce age-specific mortality rates for each area.
- 6.13 Long-term assumptions on changes in age-specific mortality rates are taken from the ONS 2012-based national population projection for England.
- 6.14 In combination with the age-specific population data, these provide the basis for the calculation of deaths in each year of the forecast period.

Migration

Internal Migration

- 6.15 Historical mid-year to mid-year counts of in- and out-migration by five year age group and sex from 2001/02 to 2011/12 have been sourced from the 'components of change' files that underpin the ONS mid-year population estimates. The original source of these internal migration statistics is the Patient Register Data Service (PRDS), which captures the movement of patients as

they register with a GP. This data provides an accurate representation of inter-area flows, albeit with some issues with regard to potential under-registration in certain age groups (young males in particular).

- 6.16 For future internal migration flows, a schedule of Age-Specific Migration Rates (ASMigR) is used in combination with the age-specific population data.
- 6.17 In the 'SNPP-2010' and the 'SNPP-2011' scenarios, the ASMigR schedules are drawn directly from the ONS 2010-based assumptions.
- 6.18 In the migration-led scenarios, the ASMigR schedules are derived from the historical migration data. In the 'Migration-led 5yr' a five-year history is used and in the 'Migration-led 10yr' scenario, a ten-year migration history is used.
- 6.19 For the 'Natural Change' scenario, the ASMigR schedule sets the internal in- and out-migration flows to zero for each year in the forecast period.
- 6.20 The jobs-led scenarios calculate their own migration assumptions to ensure an appropriate balance between population, households and the labour force, given the 'constraints' on jobs growth that are imposed in each scenario.

International Migration

- 6.21 Historical mid-year to mid-year counts of total immigration and emigration from 2001/02 to 2011/12 have been sourced from the 'components of change' files that underpin the ONS mid-year population estimates.
- 6.22 Implied within the international migration component of change is a Unattributable Population Change (UPC) figure, which ONS identified within its latest mid-year estimate revisions. In the derivation of the migration assumptions for the 'Migration-led' scenarios, the forecasting model has assigned the UPC to international migration on the assumption that it is the component with the greatest uncertainty associated with its estimation. For the 'Migration-led X' scenarios, the UPC has been excluded from the migration assumptions.
- 6.23 For future international migration flows, *counts* of migrants are defined.
- 6.24 In the 'SNPP-2010' and the 'SNPP-2011' scenarios, the international in- and out-migration counts are drawn directly from the ONS 2010-based assumptions.

- 6.25 For the 'Migration-led 5yr' and 'Migration-led 10yr' scenarios, the international in- and out-migration counts are derived from historical data, using a five- and ten-year history respectively (similarly for the 'X' versions of these scenarios). A schedule of ASMigRs is derived from either a five-year or ten-year migration history and used to distribute future counts by single year of age.
- 6.26 In the 'Natural Change' scenario, the future migration counts set the in- and out-migration flows to zero for each year in the forecast period.
- 6.27 The jobs-led scenarios calculate their own migration assumptions to ensure an appropriate balance between population, households and the labour force, given the 'constraints' on employment growth that are imposed in each scenario.

Household Assumptions

- 6.28 For each scenario, the household and dwelling implications of the 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 and 2011-based household projection models from the CLG.

Household Headship Rates

- 6.29 A household is defined as:

*"One person living alone, or a group of people (not necessarily related) living at the same address with common housekeeping - that is, sharing a living room or sitting room or at least one meal a day."*⁸

- 6.30 Household headship rates define the likelihood of a particular household type being formed in a particular year, given the age-sex profile of the population in that year. Household types are modelled within a 17-fold classification (Table 2).
- 6.31 Household headship rates used in the forecast model have been taken from the CLG 2008-based and 2011-based household projections. The 2011-based household projections were released for local authority districts in England in April 2013, superseding the 2008-based model. However, as the 2011-based household model is underpinned by the 2011-based SNPP, the headship rate

⁸ CLG. *Household Projections: Notes and Definitions for Data Analysts*. <https://www.gov.uk/household-projections-notes-and-definitions-for-data-analysts>.

assumptions have only been published for the 2011-2021 period.

Table 2: Household type classification

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

6.32 For the forecasting analysis presented in this report, two alternative headship rate assumptions have been applied:

- Option A: CLG 2011-based headship rates, with the 2011-21 trend continued after 2021 to 2033. Beyond 2033, headship rates remain fixed at their 2033 level.
- Option B: CLG 2008-based headship rates, scaled to be consistent with the 2011 Census, but following the original trend thereafter to 2033. Beyond 2033, headship rates remain fixed at their 2033 level.

Communal Population

6.33 Household projections in POPGROUP take account of the 'population-not-in-households' (communal population). This data has been drawn directly from the 2011 Census.

Vacancy Rates

6.34 The model uses the vacancy rate as a conversion factor in order to determine the relationship between the number of households and the number of dwellings. Table 3 compares vacancy rates by area as derived from the 2001 and 2011 Censuses. The 2011 vacancy rates have been used in the forecasts, remaining constant throughout the forecast period.

Table 3: Vacancy rates, 2001 & 2011

Area Name	Vacancy rates (%)	
	2001	2011
Basildon	2.3	1.7
Braintree	2.5	2.6
Brentwood	3.2	4.4
Castle Point	1.4	3.3
Chelmsford	2.0	2.2
Colchester	2.5	3.9
Epping Forest	2.4	4.4
Harlow	1.7	3.1
Maldon	3.9	5.1
Rochford	2.3	2.6
Tendring	5.1	7.2
Uttlesford	3.5	4.7
Southend-on-Sea	3.9	5.0
Thurrock	1.5	2.4
Cambridge	1.8	3.3
South Cambridgeshire	2.6	2.9
Broxbourne	2.7	3.9
East Hertfordshire	2.3	3.0
Welwyn Hatfield	2.0	4.2
Babergh	3.3	3.8
Ipswich	3.5	3.4
Mid Suffolk	3.7	3.8
Suffolk Coastal	6.9	8.2
St Edmundsbury	3.7	2.8

Source: Census 2001 & 2011

Economic Activity Rates

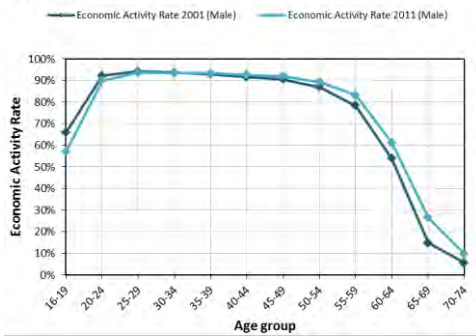
- 6.35 For each scenario (excluding the jobs-led scenarios), the labour force and jobs implications of the population growth trajectory have been evaluated through the application of three key data items: economic activity rates, a commuting ratio and an unemployment rate. In the jobs-led scenarios, these three data items are used to determine the population growth required by a particular jobs growth trajectory.
- 6.36 'Economically active' refers to the population that is both employed and unemployed, i.e. the labour force. Economic activity rates determine the level of labour force participation associated with a particular age-sex category.
- 6.37 The economic activity rates used in all the scenarios are based on the latest statistics from the 2011 Census, published in November 2013. This section provides evidence and rationale for the derivation of the economic activity rate statistics used in the scenario analysis.

2011 Census Economic Activity Rates

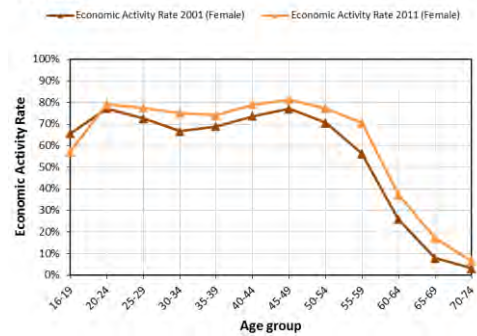
- 6.38 Economic activity rates provide the basis for calculating the size of the labour force within the population. Economic activity rates by five year age group (ages 16-74) and sex have been derived from 2011 Census statistics.
- 6.39 The 2011 Census statistics include an open-ended 65+ age categorisation, so economic activity rates for the 65–69 and 70–74 age groups have been estimated using a combination of Census 2011 tables, disaggregated using evidence from the 2001 Census.
- 6.40 A comparison of the 2001 and 2011 economic activity rates for each EPOA local authority is provided (Figure 8). This comparison indicates that economic activity rates have increased in the older age groups for both males and females in all districts, particularly for females, for whom rates have seen a general increase across all age-groups 20+.

Economic activity rates, 2001 vs. 2011 (males & females)

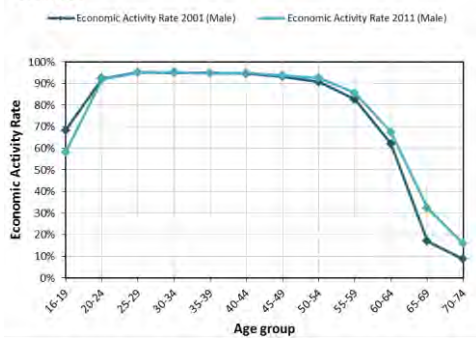
Basildon



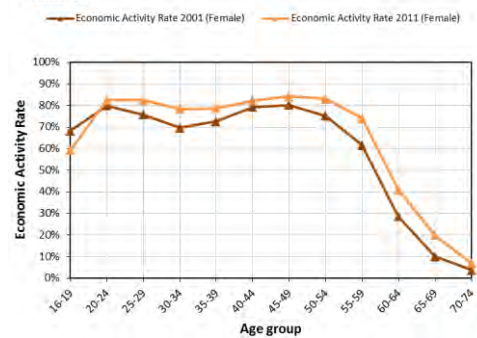
Basildon



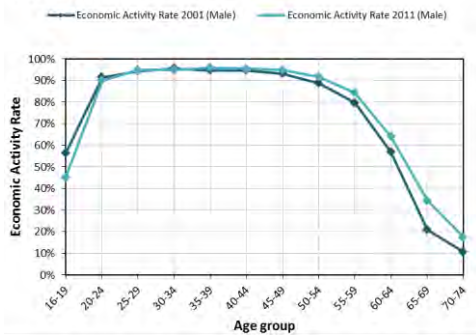
Braintree



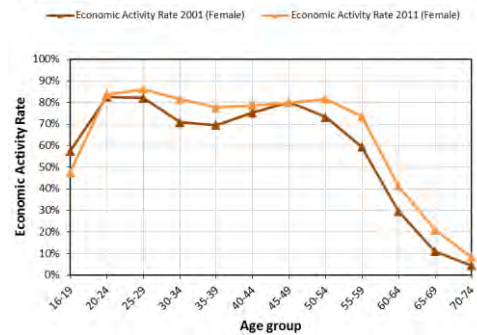
Braintree



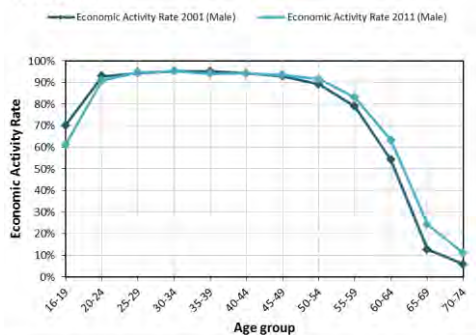
Brentwood



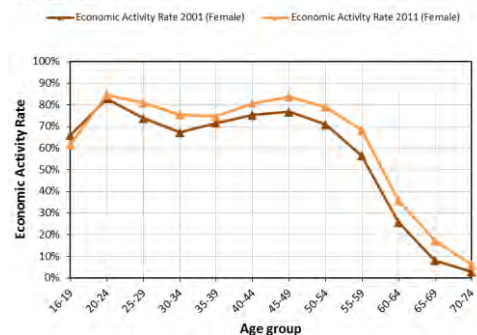
Brentwood



Castle Point

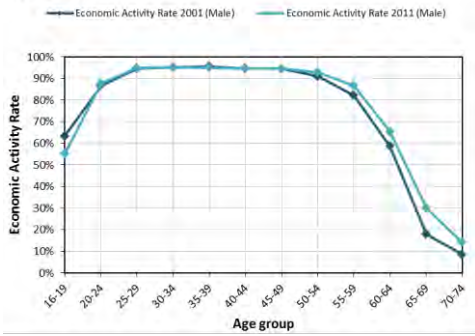


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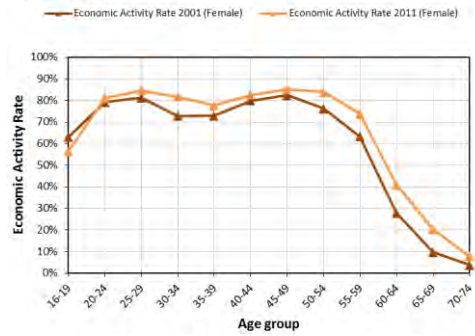


Economic activity rates, 2001 vs. 2011 (males & females)

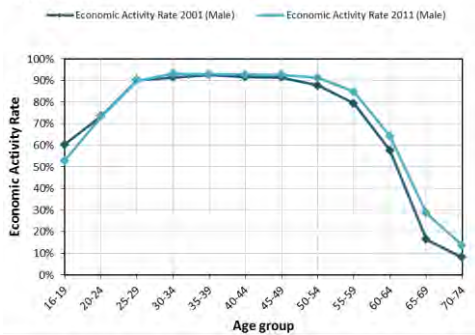
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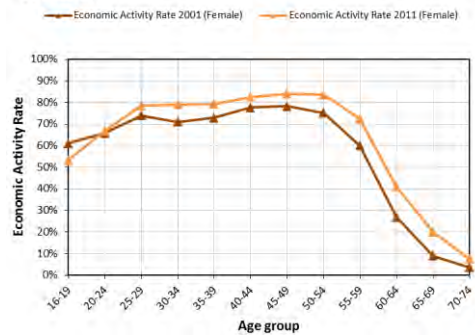
Chelmsford



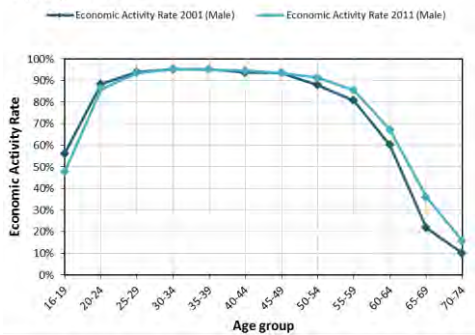
Colchester



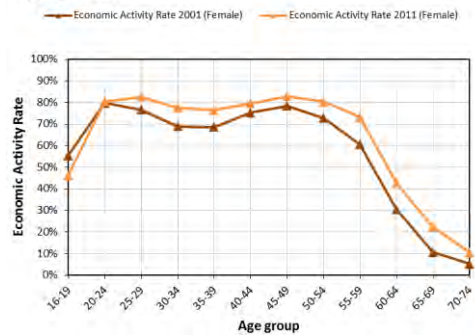
Colchester



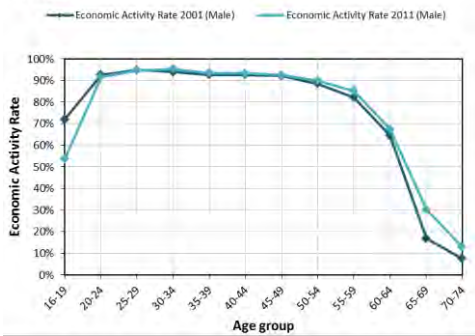
Epping Forest



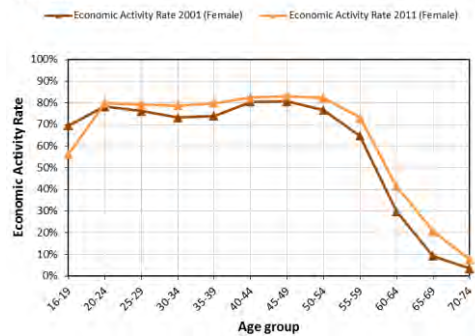
Epping Forest



Harlow

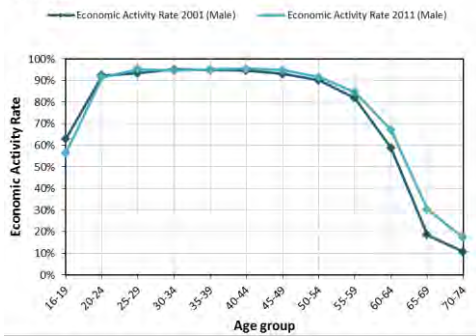


Harlow

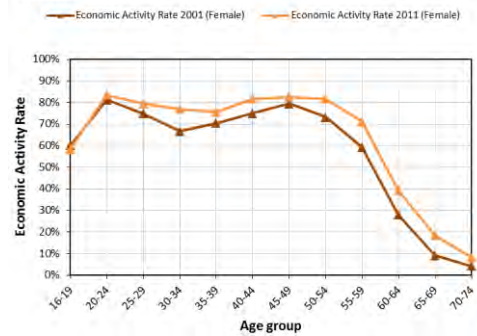


Economic activity rates, 2001 vs. 2011 (males & females)

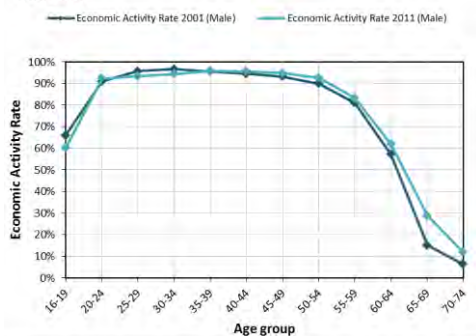
Maldon



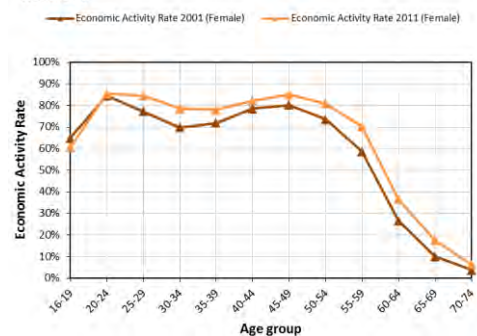
Maldon



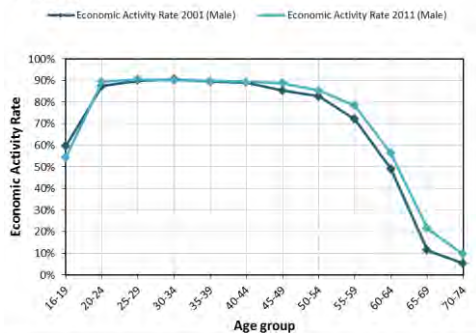
Rochford



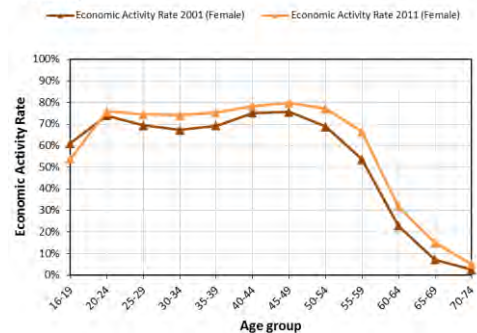
Rochford



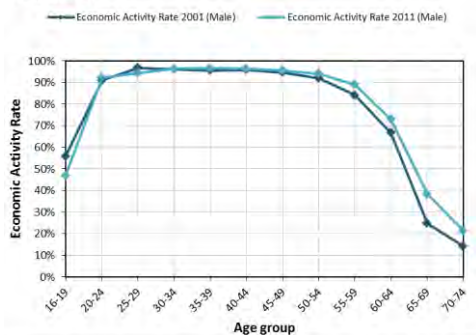
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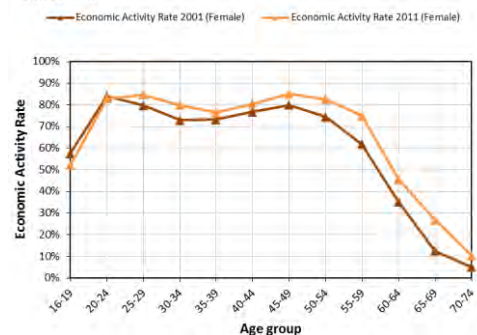
Tendring



Uttlesford

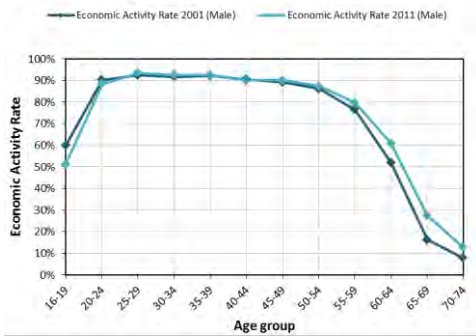


Uttlesford

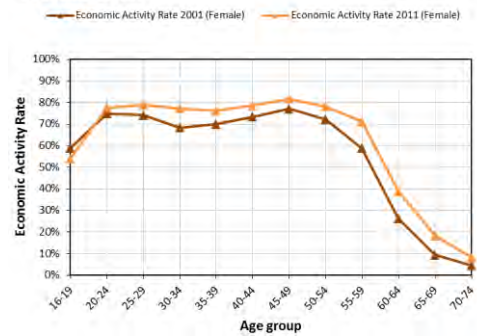


Economic activity rates, 2001 vs. 2011 (males & females)

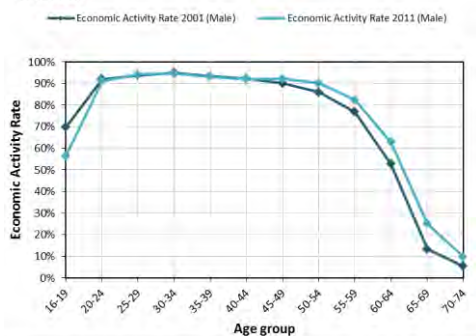
Southend-on-Sea



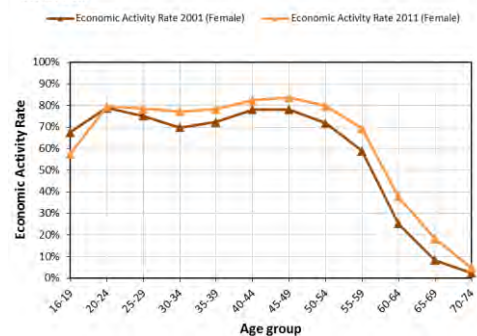
Southend-on-Sea



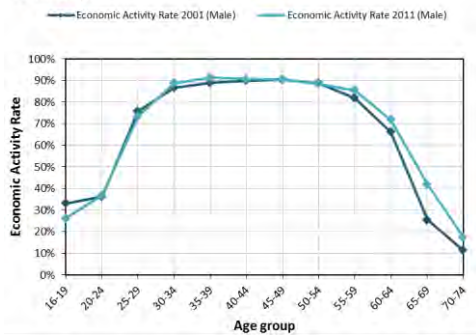
Thurrock



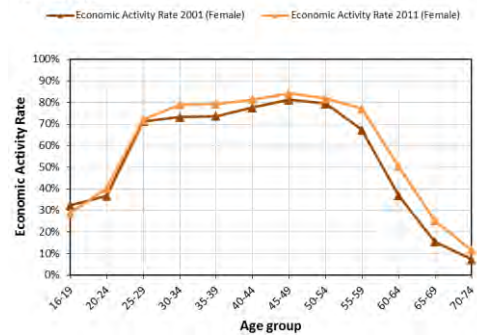
Thurrock



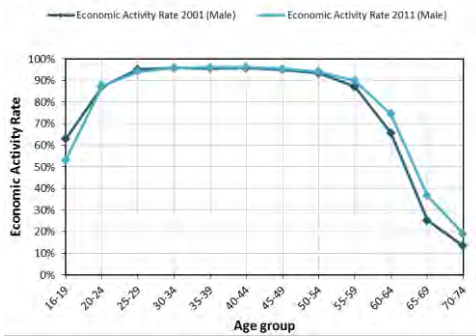
Cambridge



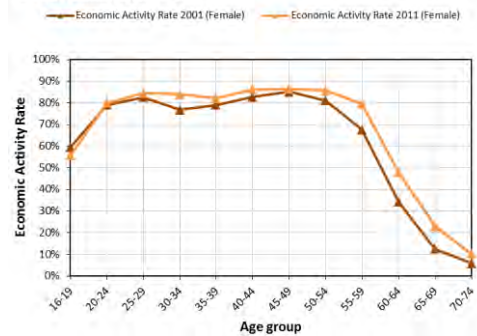
Cambridge



South Cambridgeshire

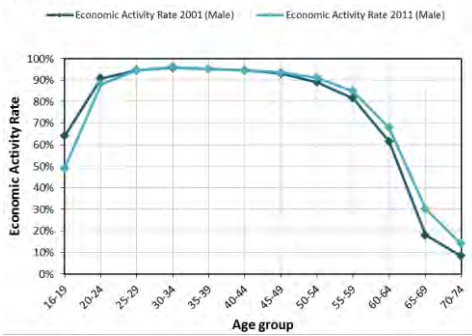


South Cambridgeshire

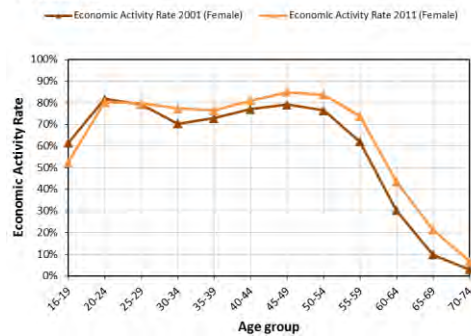


Economic activity rates, 2001 vs. 2011 (males & females)

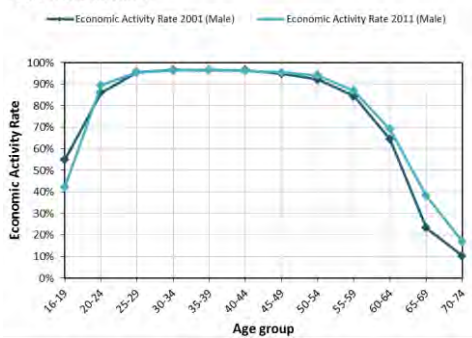
Broxbourne



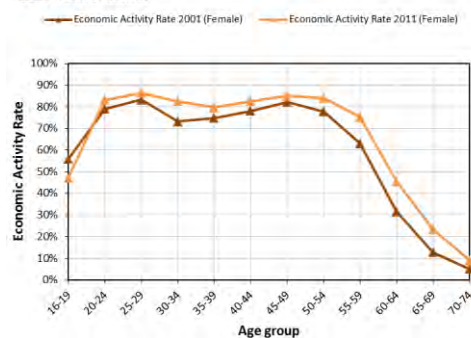
Broxbourne



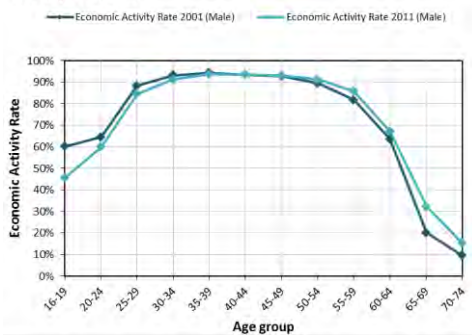
East Hertfordshire



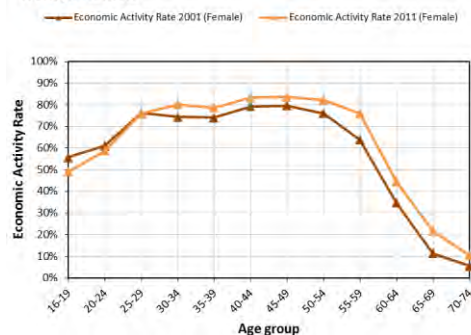
East Hertfordshire



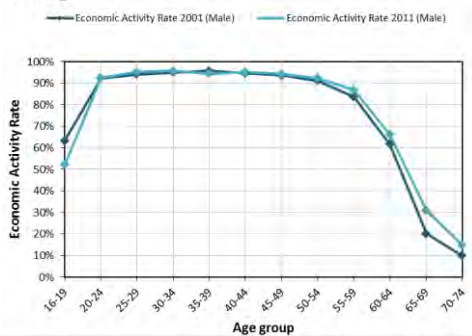
Welwyn Hatfield



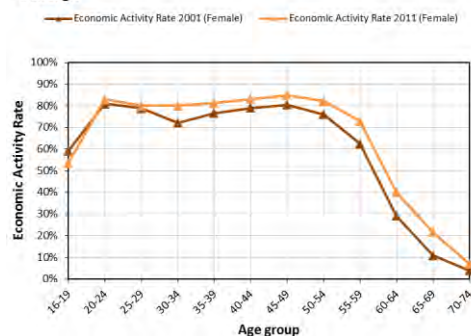
Welwyn Hatfield



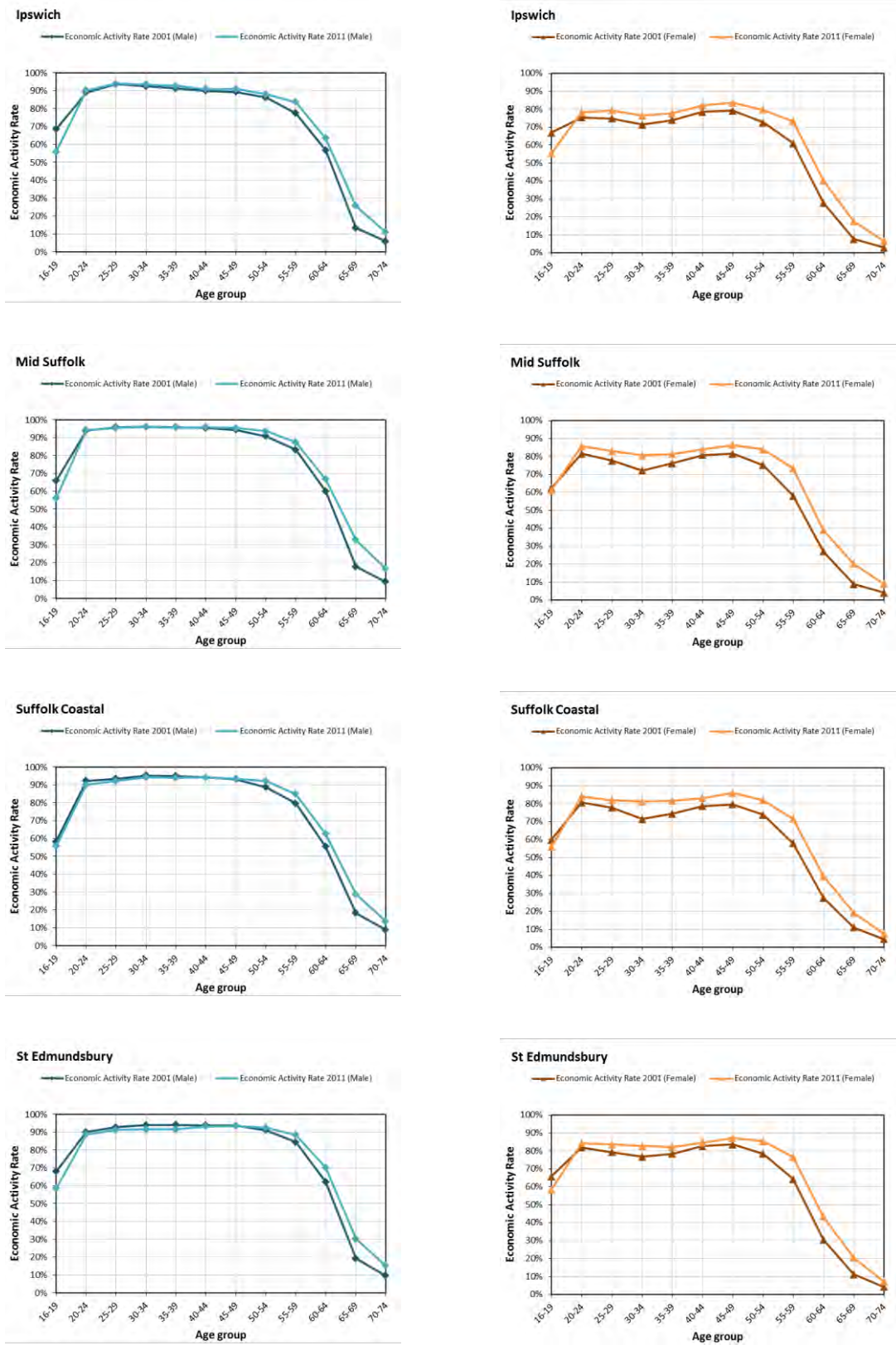
Babergh



Babergh



Economic activity rates, 2001 vs. 2011 (males & females)



Source: Census 2001 & 2011

Figure 8: Economic activity rates, 2001 vs. 2011 (males & females)

Amendments to Economic Activity Rates

- 6.41 Using the 2011 Census statistics as a base, changes have been made to the age-sex specific economic activity rates to take account of changes to the State Pension Age (SPA) and to accommodate potential changes in economic participation which might result from an ageing but healthier population in the older labour-force age-groups.
- 6.42 Employment forecasts (including those from the EEFM) routinely apply changes to older-age economic participation rates in the derivation of longer-term forecasts of jobs growth. It is therefore important to give these assumptions due consideration in the demographic assessment of these forecasts.
- 6.43 The SPA for women is increasing from 60 to 65 by 2018, bringing it in line with that for men. Between December 2018 and April 2020, the SPA for both men and women will then rise to 66. Under current legislation, the SPA will be increased to 67 between 2034 and 2036 and 68 between 2044 and 2046. It has been proposed that the rise in the SPA to 67 is brought forward to 2026–2028⁹.
- 6.44 ONS published its last set of economic activity rate forecasts from a 2006 base¹⁰. These incorporated an increase in SPA for women to 65 by 2020 but this has since been altered to an accelerated transition by 2018 plus a further extension to 66 by 2020. Over the 2011–2020 period, the ONS forecasts suggested that male economic activity rates would rise by 5.6% and 11.9% in the 60-64 and 65-69 age groups respectively. Corresponding female rates would rise by 33.4% and 16.3% (Figure 9).
- 6.45 Given the accelerated pace of change in the female SPA and the clear trends for increased female labour force participation across all age-groups in the last decade, these 2011–2020 rate increases would appear to be relatively conservative assumptions.

⁹ <https://www.gov.uk/changes-state-pension>

¹⁰ ONS January 2006, Projections of the UK labour force, 2006 to 2020 <http://www.ons.gov.uk/ons/rel/lms/labour-market-trends--discontinued-/volume-114--no--1/projections-of-the-uk-labour-force--2006-to-2020.pdf>

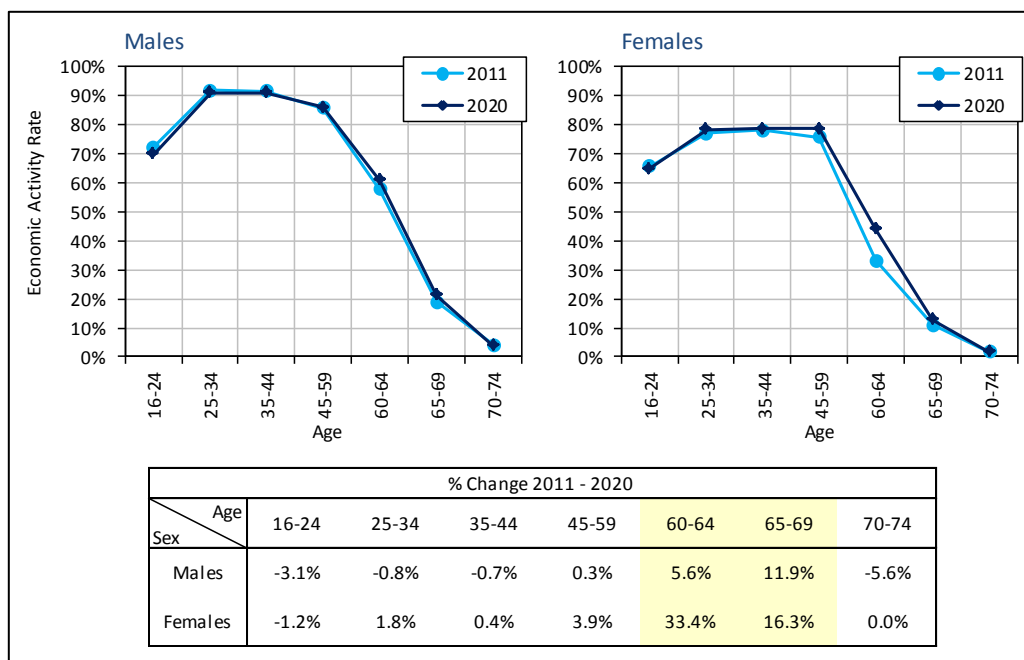


Figure 9: ONS Labour Force Projection 2006 – Economic Activity Rates 2011–2020 (Source: ONS)

6.46 To take account of planned changes to the SPA, the following modifications have been made to the economic activity rates for each EPOA local authority:

- Women aged 60-64: 40% increase from 2012 to 2020.
- Women aged 65-69: 20% increase from 2012 to 2020.
- Men aged 60-64: 5% increase from 2012 to 2020.
- Men aged 65-69: 10% increase from 2012 to 2020.

Note: a 10% increase implies a 10% change in the economic activity rate. So for example a 20% economic activity rate would be increased to 22%. A 10% change does not imply an increase from 20% to 30%.

6.47 Changes have been applied incrementally over the 2012–2020 forecast period. Note that the rates for women in the 60–64 age and 65–69 age-groups are higher than the original ONS figures, accounting for the accelerated pace of change in the SPA. No changes have been applied to other age-groups. In addition, no changes have been applied to economic activity rates beyond 2020. This is an appropriately prudent approach given the uncertainty associated with forecasting future rates of economic participation.

6.48 These alternative economic activity rates are presented as realistic and robust alternatives to the very unlikely scenario of ‘fixed’ rates over the forecast period.

Unemployment Rate

- 6.49 Within the forecasting methodology, 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.
- 6.50 The EEFM model, which provides the jobs forecasts used within this analysis, uses an unemployment rate figure that is based on a job-seekers allowance (JSA) claimant statistic, rather than the standard measure defined by the International Labour Organisation (ILO) and used within the POPGROUP forecasting analysis.
- 6.51 Within its forecasts the EEFM varies the JSA statistic over time, reflecting changing economic conditions and anticipated jobs growth or decline. The forecasting analysis presented here varies the underlying unemployment statistic to account for a period of recovery post-2013. The change in the rate of unemployment is relatively modest but enables a recovery to an unemployment rate position that is equivalent to each local authority's 'average' position over the last nine years (for which data is available).
- 6.52 For each local authority, an initial unemployment rate is defined based upon the average for the last five years (2008/09-2012/13) (Table 4). Over the 2013-2020 forecast period, these initial unemployment rates reduce to a figure that is equivalent to a nine-year average (2004/05 – 2012/13). If the nine-year average is higher than the five-year average, no change is made to the initial unemployment rate figure over the forecast period.
- 6.53 EEFM unemployment rates continue to fall beyond 2020 but the scenario assessment presented here assumes that the rates remain fixed after 2020, throughout the forecast period.

Table 4: Unemployment rate, 5-year and 9-year averages

Area Name	Unemployment rates (%), NOMIS	
	5-year average (2008-12)	9-year average (2004-12)
Basildon	7.9	6.4
Braintree	6.5	4.9
Brentwood	4.7	3.7
Castle Point	5.7	4.8
Chelmsford	6.2	5.0
Colchester	5.7	5.0
Epping Forest	7.9	6.3
Harlow	10.2	8.1
Maldon	8.0	5.3
Rochford	5.3	4.8
Tendring	8.7	7.6
Uttlesford	3.5	3.3
Southend-on-Sea	6.5	5.9
Thurrock	8.5	6.4
Cambridge	4.4	4.8
South Cambridgeshire	4.4	3.7
Broxbourne	7.4	6.1
East Hertfordshire	3.7	3.8
Welwyn Hatfield	7.3	6.1
Babergh	4.2	3.9
Ipswich	7.5	5.9
Mid Suffolk	4.2	3.6
Suffolk Coastal	5.0	4.1
St Edmundsbury	6.4	4.9

Source: NOMIS

Commuting Ratio

- 6.54 The commuting ratio, together with the unemployment rate, controls the balance between the size of the labour force and the number of jobs available within an area.
- 6.55 Information on commuting from the 2011 Census has not yet been published. Using a combination of statistics from the 2011 Census, commuting ratios have been derived for each of the EPOA local authorities. In all scenarios these rates are held constant for the duration of the forecast period 2012 to 2037.
- 6.56 The commuting ratio is 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. The number of workers includes all economically active residents (i.e. all residents aged 16–74). The number of jobs has been calculated by subtracting the number of residents not in employment and the number of

residents aged 0–15 and those aged 75+ from the district’s workday population.

- 6.57 The derived 2011 commuting ratios for all EPOA local authorities are illustrated (Table 5). For comparison, these are presented alongside the 2001 commuting ratios, derived from 2001 Census statistics. In the case of the 2001 commuting ratio, ‘workers’ and ‘jobs’ are both derived from aggregating the travel-to-work statistics.
- 6.58 A commuting ratio greater than 1.0 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 that is less than 1.0 indicates a net in-commute.

Table 5: Commuting ratios, 2001 and 2011

Area Name	Commuting Ratios	
	2001	2011
Basildon	1.02	1.00
Braintree	1.29	1.30
Brentwood	1.02	1.07
Castle Point	1.94	1.67
Chelmsford	1.08	1.05
Colchester	1.03	1.02
Epping Forest	1.49	1.31
Harlow	0.97	1.01
Maldon	1.42	1.33
Rochford	1.65	1.55
Tendring	1.30	1.25
Uttlesford	1.00	1.01
Southend-on-Sea	1.10	1.13
Thurrock	1.21	1.21
Cambridge	0.63	0.61
South Cambridgeshire	1.07	1.07
Broxbourne	1.34	1.20
East Hertfordshire	1.16	1.25
Welwyn Hatfield	0.84	0.76
Babergh	1.26	1.19
Ipswich	0.81	0.91
Mid Suffolk	1.24	1.17
Suffolk Coastal	1.08	1.08
St Edmundsbury	1.01	0.97

Source: Census 2001 & 2011