

The housing requirement and all matters relating to the Strategic Housing Market Assessment (SHMA)

Hearing Statement for Sessions on 10th and 11th December 2013

1.0 INTRODUCTION

- 1.1 This statement has been prepared by Barton Willmore on behalf of Taylor Wimpey UK Ltd and Bovis Homes Ltd in response to the questions posed by the Inspector within his Paper ID/42.
- 1.2 The nature of the questions asked and the issues under discussion mean that the majority of this statement is a technical and detailed assessment of each individual issue raised within the Inspector's Questions. For clarity, we set out below our overriding summary and conclusions in response to the issues addressed by the Inspector; followed by our detailed responses to each of the matters under consideration in the remainder of this statement.

2.0 SUMMARY

- 2.1 As a starting point, it is important to be clear on the role of the SHMA and the need to ensure the evidence base surrounding the housing requirement is robust. The NPPF (para 47) requires Councils to:

"use their evidence base to ensure that their Local Plan meets the full, objectively assessed needs for market and affordable housing in the housing market area, as far as is consistent with the policies set out in [the] Framework, including identifying key sites which are critical to the delivery of the housing strategy over the plan period;"

- 2.2 Unless there is a true and robust objective assessment of housing needs, it will not be possible to assess whether the Core Strategy makes provision for sufficient housing to meet these needs. The Inspector has an obligation (under the provisions of paragraph 112 of the Localism Act) to assess whether the Plan meets the tests of soundness, or whether changes can be made to the Plan to enable the tests of soundness to be satisfied. The issue of housing provision therefore needs to be assessed in detail and the Inspector must have sufficient assurance that the proposed level of housing is sufficient to meet the objectively assessed housing needs of B&NES if it is found to be sound.

- 2.3 Our detailed review of the B&NES SHMA evidence base identifies a number of areas in which the SHMA is deficient and/or relies on unfounded evidence which has skewed the findings of the SHMA. We have a number of detailed criticisms of the SHMA, but our key criticisms of the SHMA undertaken by the Council relate to the following issues:
- The Council’s assessment of housing need fails to acknowledge the most recent ONS population estimates. The evidence base does not therefore satisfy the requirements of paragraph 158 of the NPPF;
 - The Council’s assessment takes account of the historic ‘other unattributable’ component of migration in its projections which skews the figures and which the Office of National Statistics state should be excluded from analysis of migration trends;
 - The Council’s assessment of affordable housing need is fundamentally flawed as it fails to take account of any existing affordable housing backlog within its calculations. Without knowledge of the degree of affordable backlog, the Council is unable to quantify the level of affordable need and as such the current SHMA cannot be found to provide a sound basis on which to inform policy.
- 2.4 Taking account of each of the above issues, we are firmly of the view that the current housing figure proposed in the Proposed Changes Core Strategy provided by the Council cannot be found to be sound in its current form. Our assessment of the impact that each of these factors has when combined shows that it results in a significant under provision in housing. Taking account of each of these factors, the objectively assessed housing needs for B&NES only (ignoring the wider HMA and the requirement to accommodate any unmet need from neighbouring authorities) is shown to be 17,168 (2011 – 2029). To address issues of historic shortfall and the backlog in the delivery of affordable housing, we consider that a requirement in the region of 18,000-20,000 homes is required to meet the housing needs of B&NES. This is the minimum housing requirement that the Core Strategy should plan for, even if we accepted that the B&NES Core Strategy could ignore unmet need from neighbouring Authorities (which for the avoidance of doubt we do not).
- 2.5 We remain concerned that the Core Strategy fails to take account of any unmet need from neighbouring authorities. We are firmly of the view that under the provisions of the test of soundness within the NPPF, there is a requirement for plans to be positively prepared in order to be found sound. This test requires that:

“the plan should be prepared based on a strategy which seeks to meet objectively assessed development and infrastructure requirements, including unmet requirements from neighbouring authorities where it is reasonable to do so and consistent with achieving sustainable development;”

- 2.6 Without the Plan being based on a robust evidence base that first quantifies the objectively assessed needs of B&NES and then takes account of the unmet needs from neighbouring authorities, we consider that it would not be possible to satisfy the above test of soundness. Consequently, the Inspector would be unable to find the Plan sound.
- 2.7 Furthermore, we reiterate our previous concerns that the Council’s evidence presented to the Examination has purposefully restrained the level of new homes required. As indicated in the correspondence between B&NES and Bristol City Council (Appendix 1), initial “Oxford central based growth targets” were suggesting a requirement of circa 16,000 homes. Clearly the Council’s evidence now suggests a significantly lower figure, but the reason for this has not been explained which undermines the Council’s evidence. We have sought an answer to this question in earlier statements but not yet received a response.

3.0 EVIDENCE BASE

- 3.1 In the first instance we would highlight the difficulty in undertaking a thorough review of the Council’s evidence base given the extent of changes to the Council’s justification since publication of the Strategic Housing Market Assessment. Indeed, we are unclear at this stage what purpose the strategic housing market assessment serves, and how much of it still remains part of the Council’s evidence base. We consider the lack of clarity in the evidence base is such that the ability of participants to understand this evidence base and become involved in the Examination has been prejudiced as a result.
- 3.2 The remainder of our response sets out our detailed response to the Inspectors Questions.

4.0 LOCAL AND NEIGHBOURHOOD PLANS

3.4 Should/can this guidance [the NPPG], and particularly the chapter on the Assessment of Housing and Economic development Needs be applied in this Examination? If not, will the current advice in CLG Strategic Housing Market Assessments Practice Guidance Version 2, 2007 and related Annexes remain

applicable? (CD4/H24 and H25). Does the NPPG set out a similar, or significantly different, approach to the 2007 Practice Guidance, particularly in relation to assessing affordable housing needs?

- 4.1 The NPPG does not introduce new Government Policy, but rather guidance on how local authorities should interpret and comply with the Framework. As such it is essential that in testing a Local Plan's compliance with the Framework, both it and its evidence base is tested against the NPPG. It must also be remembered that the previous guidance pre-dates the Framework, and cannot necessarily be considered to be complementary to the aims and requirements of the Framework.

5.0 POPULATION PROJECTIONS

3.5 Is the Council's reliance now on the ONS' corrected mid-year population estimates for 2001-2011 an appropriate starting point? Does the need for the ONS to correct past mid-year estimates undermine the utility of the ONS 2008 and 2010 population projections for assessing housing need in B&NES?

1) ONS Revised Mid Year Estimates

- 5.1 We do consider it appropriate to utilise the latest revised mid year estimates, however we would raise concerns over the way in which they have been interpreted by the Council. Inherent within the Council's calculation of past annual migration is the inclusion of a category within the revised mid-year estimates termed 'other change'. In preparing the revised mid-year estimates ONS has sought to reconcile the annual population estimates 2002 – 2010 within the two Census points (2001 and 2011). In doing so, the ONS has made revisions where possible, with the balance of population identified in an 'other' category – 'other' being a balancing factor.
- 5.2 Sub-section 11 of the 'Methods used to revise the subnational population estimates...' (Appendix 2 of this statement) is headed 'Factors contributing to the other component' and sets out that this is likely to be due to a combination of potential inaccuracies in any of the following:

'Internal migration, international migration, mid-2001 population estimates, 2011 Census estimates, prison definitions, any other component of population estimates over the decade'

- 5.3 The point being the ONS simply are unable to establish what the 'other' element constitutes. It may be as a result of incorrect population estimates at either of the Census bookends of 2001 and 2011. We have also sought direct confirmation from the ONS on this point, and attach email correspondence from the ONS, who confirm that their considered view is that *'as we cannot be certain whether or not the "other unattributable" relates to migration it would seem sensible to exclude it from migration trends'* (Appendix 3 of this Statement).
- 5.4 Furthermore, it is also important to note that even if it were appropriate to include 'other' within the calculation of past migration trends, the ONS's Method Statement (Appendix 2) confirms in the final paragraph of page 11 that *'as at a national level, the Other component has been split across the decade on a cohort basis'*. Essentially the ONS have spread 'other' evenly across the decade. The effect of this is to assume that the error which amounted to 'other' occurred evenly across the decade, which in reality may not be the case. In fact when reading the detail of the ONS method statement it is clear that the ONS has been more capable of making known revisions to estimates since c.2005, and less able to make revisions before this time. This might suggest that the remaining 'other' element is more attributable to estimates in the early part of the decade, meaning that this would have less impact on short term net migration calculations made by the Council (2007 – 2011).
- 5.5 However, given the uncertainty of the 'other' component of the annual migration figures as we have attempted to explain here, we do not consider it appropriate to include it within the calculation of migration trends.
- 5.6 We summarise the impact on past migration of the 'other' element, as well as summarising the impact of the 2011/2012 mid year estimate migration figure.

Table 1 - ONS revised mid year estimates

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
BATH AND NORTH EAST SOMERSET UA											
Net Migration	1,145	1,017	755	1,220	219	1,716	1,170	101	1,287	1,428	1,853
Other¹	-441	-437	-454	-442	-455	-436	-440	-435	-453	-507	-31
Net Migration & Other Combined Changes	704	580	301	778	-236	1,280	730	-334	834	921	1,822

Note: ¹ includes an 'unattributable other' element which the ONS confirm maybe associated with migration, or any other component of population change since 2001, including the 2001 or 2011 Census estimates.

Source: ONS, 2001 - 2011 MYE revised in light of 2011 Census (April 2013), 2012 MYE (June 2013).

5.7 There are two key issues to note from the above table. The first of these is the inclusion of net migration from the latest 2011/12 mid year estimates, which even under the Council’s assumption that ‘other’ should be included within the calculation of past migration trends, increases the short term migration trend from 686 per annum, to 795 per annum. This exceeds the highest migration trend assessed by the Council, which appears to be based on an assumption of 681 net migrants per annum.

5.8 The second key issue to note is the effect of including ‘other’ within the calculation of past net migration trends. As set out above we, and indeed the ONS do not consider it appropriate to include ‘other’ with this calculation, and its removal from the Council’s short term trend calculation would increase short term migration trends to 1,168 net migrants per annum (2008 – 2012). This is double the level of migration assessed by the Council in its mid trend scenario. We summarise these short term trend calculations in the table below.

Table 2 – Short tern net migration trends

BATH AND NORTH EAST SOMERSET UA	Long Term Trend (per annum)		Short Term Trend (per annum)	
	02-11	03-12	07-11	08-12
Net Migration	1,006	1,077	1,140	1,168
Other ¹	-450	-409	-454	-373
Net Migration & Other Combined Changes	556	668	686	795

5.9 We have taken the opportunity to update our own demographic forecasts with the revised ONS mid year estimates (2002 – 2010), along with 2011/12 mid year estimates, and conclude the following.

6.0 REVISED POPGROUP DEMOGRAPHIC FORECASTS

6.1 For the avoidance of doubt the demographic-led scenario included with Barton Willmore’s West of England Sub-Regional Housing Study (Table 7.3) was underpinned by the population (by age and gender) from the 2011-interium sub national population projections to 2021, and thereafter the underlying rates of fertility, mortality and migration underpinning the 2010-based SNPP – this reflecting the latest available assumptions at the time of production of the report.

- 6.2 We have re-run the demographic-led scenario based on the detailed population data (by age and gender) by single year provided by the revised mid year estimates. In addition we then go on to test, first the implications of more recent short term migration trends (2008 – 2012), assuming 'other' is incorporated within the migration trend (as assumed by the Council). We then take this scenario a step further by testing the implications of excluding 'other' from the short term migration trend calculation. The output of these steps is summarised in Tables 3 and 4. More detailed summaries are supplied at Appendix 4 and 5.
- 6.3 To enable comparison with the approach adopted by ORS, the migration assumptions used in each scenario are presented at Tables 5 and 6.

The headline results are as follows:

- Adjusted trend net migration of +793 per annum 2012/13 to 2028/29 results in a plan period dwelling requirement of 14,380 or 800 dpa and labour force supply of between 6,400 and 7,800 over the plan period
- Unadjusted trend net migration of +1,168 per annum 2012/13 to 2028/29 results in a plan period dwelling requirement of 17,170 or 950 dpa and labour force supply of between 12,400 and 13,800 over the plan period

About the revised projections and the conversion from population to households

- 6.4 In converting the population to households, the population that is not in households is deducted to give a household population, to which headship rates are applied.
- 6.5 Two key points should be noted as regards the population not in households:
- At present, the population not in households is officially projected to 2021. In the absence of projections after 2021, the population not in households by age group and gender is held constant. This is likely to result in an undercount of older, single person households between 2021 and 2031, because the trend is toward independent living. In turn it is probable that the household estimates are conservative, notwithstanding any increase in managed accommodation/ halls of residence that might take place over the plan period.

- The population not in households includes c3, 100 16 to 24 year olds in each year of the projection after 2011. This group includes students in managed accommodation/halls of residence. Whilst this population is not in households, it does form part of the population aged 16-64. It is reasonable to assume that students in halls of residence will not be available for full time work, a point that should be born in mind when assessing the capacity of the district to meet labour demand over the plan period.

6.6 The headship rates that have been applied to the household population are the 2011 based rates between 2011 and 2021, reverting back to the 2008 based rates by the end of the plan period.

6.7 We can examine the impact of applying the 2011 headship rates in 2011, by applying the 2008 based rates to the same household population. This is a worthwhile and necessary exercise because the 2011 based headship rates are exceptional, breaking a trend of household formation that was evident in the results of the 1961-71 Census through successive Census results up to 2001. If, as we firmly hold to be the case, the results of the 2011 Census, (and Labour Force Surveys in the later part of the last decade), bear witness to the combined effects of a decade of housing undersupply and the recession of 2008-11 on household formation, then doing so helps quantify that impact and the scale of the problem to be addressed through planning policy.

6.8 In 2011, both the 793 net migration and the 1168 net migration projection give rise to 1,250 fewer households than would have been the case if the long term trend 2008 based headship rates were used. By 2021, the final year in which the 2011 based rates are applied, the gap increases to 2,720 and 2,880 respectively. Clearly, applying the 2011 based rates increases suppressed need between 2011 and 2021. The suppressed need that builds up by 2021 is then released over the remainder of the plan period by returning the headship rate back to the 2008 based rates in 2029. See our response to Question 3.12.

6.9 The resultant profile of need is therefore back loaded. The Council should ensure that suppressed need is addressed early in the plan period. The evidence of suppressed need in 2011 is a clear market signal that supply should in fact be front loaded so such need is reduced rather than increased in the first half of the plan period. Further market signals are considered below (see paragraphs 7.9 to 7.12 and 8.8 to 8.10).

About the labour force calculation

6.10 In the absence of any official current or past housing market assessment guidance regarding the treatment of labour force supply and the relationship between labour force and employment projections, our updated assessment is informed by draft NPPG on the matter. In its draft form, NPPG advises that plan makers should make an assessment of the likely growth in job numbers based on past trends and/or economic forecasts as appropriate and also having regard to the growth of the working age population in the housing market area.

“Where the supply of working age population (labour force supply) is less than the projected job growth, this will result in unsustainable commuting patterns and could reduce the resilience of local businesses. In such circumstances, plan makers will need to consider increasing their housing numbers to address these problems.”
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6.11 In light of the above and mindful of the confusion, disagreement and lack of any robust, up to date economic activity rate projections either at the national or local level, the labour force supply reported here is reported as the population aged 16 to 64 and alternatively, the population aged 16 to 68 (to take account of actual and planned increases to the State Pension Age). In line with NPPG these totals should be compared with job growth projections and aspirations for the district, which either should then match, or housing supply should be increased.

Table 3, Population, household and labour force change, B&NES, all persons (793 net migration)

Age group	2001	2011	2001-2011	2029	2011-2029	Annual average	2031	2011-2031	Annual average
0-4	8,987	9,231	244	11,483	2,252	125	11,548	2,317	116
5-15	21,812	20,322	-1,490	23,783	3,461	192	24,437	4,115	206
16-24	20,987	26,817	5,830	28,603	1,786	99	29,035	2,218	111
25-34	21,896	19,605	-2,291	25,450	5,845	325	25,375	5,770	289
35-44	23,925	22,646	-1,279	23,492	846	47	24,894	2,248	112
45-49	11,084	12,787	1,703	10,047	-2,740	-152	9,725	-3,062	-153
50-59	21,969	21,339	-630	21,060	-279	-16	20,380	-959	-48
60-64	8,306	10,732	2,426	11,678	946	53	11,399	667	33
65-68	6,133	7,475	1,342	8,904	1,429	79	9,137	1,662	83

69-74	8,956	8,643	-313	11,081	2,438	135	11,643	3,000	150
75-84	11,124	11,005	-119	15,893	4,888	272	15,912	4,907	245
85-89	2,639	3,241	602	4,555	1,314	73	5,142	1,901	95
90+	1,340	1,695	355	3,291	1,596	89	3,472	1,777	89
Total Population	169,158	175,538	6,380	199,321	23,783	1,321	202,098	26,560	1,328
Total Households	71,214	73,335	2,121	87,716	14,381	799	89,111	15,776	789
Labour force 16-64	108,167	113,926	5,759	120,330	6,404	356	120,808	6,882	344
'Labour force' 16-68	114,300	121,401	7,101	129,234	7,833	435	129,945	8,544	427

Table 4, Population, household and labour force change, B&NES, all persons (1,168 net migration)

Age group	2001	2011	2001-2011	2029	2011-2029	Annual average	2031	2011-2031	Annual average
0-4	8,987	9,231	244	12,241	3,010	167	12,381	3,150	158
5-15	21,812	20,322	-1,490	24,541	4,219	234	25,449	5,127	256
16-24	20,987	26,817	5,830	29,717	2,900	161	30,190	3,373	169
25-34	21,896	19,605	-2,291	29,347	9,742	541	29,349	9,744	487
35-44	23,925	22,646	-1,279	25,240	2,594	144	27,297	4,651	233
45-49	11,084	12,787	1,703	9,651	-3,136	-174	9,452	-3,335	-167
50-59	21,969	21,339	-630	20,654	-685	-38	19,833	-1,506	-75
60-64	8,306	10,732	2,426	11,687	955	53	11,381	649	32
65-68	6,133	7,475	1,342	8,892	1,417	79	9,122	1,647	82
69-74	8,956	8,643	-313	10,987	2,344	130	11,568	2,925	146
75-84	11,124	11,005	-119	15,810	4,805	267	15,803	4,798	240
85-89	2,639	3,241	602	4,597	1,356	75	5,182	1,941	97
90+	1,340	1,695	355	3,384	1,689	94	3,569	1,874	94
Total Population	169,158	175,538	6,380	206,748	31,210	1,734	210,576	35,038	1,752
Total Households	71,214	73,335	2,121	90,503	17,168	954	92,343	19,009	950
Labour force 16-64	108,167	113,926	5,759	126,296	12,370	687	127,502	13,576	679
'Labour force' 16-68	114,300	121,401	7,101	135,188	13,787	766	136,624	15,223	761

About the migrations assumptions used

- 6.12 All migrations assumptions have been sourced from 'Components of population change; Detailed time series 2002 to 2012 England and Wales, local authorities, sex and age' ONS October 2013.
- 6.13 The time series supplies annual mid-year population estimates and estimated components of population change for England and Wales, local authorities, by sex and single year of age, 30 June 2001 to 30 June 2012.
- 6.14 The release contains the most detailed population estimates and components of change for the mid-year population series. It builds on the detailed components of change already published by ONS (20 August 2013) covering the period 2002 to 2011, by adding the most recent data from the mid-2012 population estimates release. This offers a complete time series of population estimates at detailed level from mid-2001 to mid-2012.
- 6.15 The adjustment to migration under the '793 NMG' projection presented here has been made by age and gender as supplied by ONS under the 'special change' and 'unattributable' categories which reflect changes due to overseas dependent populations and Census 2011 based adjustments respectively.
- 6.16 For the purposes of modelling the impact of these adjustments, only the 'Internal In' migration totals by age and gender have been changed under the adjusted migration assumptions (Table 5). This ensures that the net effect of the adjustments by age and gender is preserved. The unadjusted '1168 NMG' projection migration assumptions are set out in Table 6.

Table 5 Plan Period Migration Assumptions, ONS detailed time series 2008-2012 based, adjusted (793 net migration)

Age Group	Internal In	Internal Out	Internal Net	Overseas In	Overseas Out	Overseas Net	Total Net Migration
0-4	488	384	104	51	31	19	123
5-9	264	216	48	40	20	20	68
10-14	285	202	83	29	15	15	98
15-19	2,609	922	1,687	286	47	240	1,926
20-24	2,838	4,282	-1,445	897	366	531	-913
25-29	1,172	1,765	-594	446	370	75	-518
30-34	874	923	-50	224	190	34	-15
35-39	710	599	111	133	139	-6	105
40-44	499	446	53	73	82	-10	43
45-49	364	343	20	55	50	5	26
50-54	247	293	-46	32	37	-5	-51
55-59	206	233	-27	18	20	-2	-30
60-64	207	223	-17	15	19	-4	-21
65-69	137	139	-2	16	17	-2	-4
70-74	85	79	6	3	3	-1	5
75+	208	254	-46	2	4	-2	-48
All	11,190	11,306	-115	2,319	1,410	908	793

Table 6, Plan Period Migration Assumptions, ONS detailed time series 2008-2012 based, unadjusted (1168 net migration)

Age Group	Internal In	Internal Out	Internal Net	Overseas In	Overseas Out	Overseas Net	Total Net Migration
0-4	500	384	116	51	31	19	136
5-9	278	216	62	40	20	20	82
10-14	281	202	79	29	15	15	93
15-19	2,687	922	1,765	286	47	240	2,004
20-24	3,089	4,282	-1,193	897	366	531	-662
25-29	1,274	1,765	-491	446	370	75	-416
30-34	859	923	-64	224	190	34	-30
35-39	654	599	55	133	139	-6	49
40-44	480	446	34	73	82	-10	24
45-49	358	343	15	55	50	5	20
50-54	260	293	-33	32	37	-5	-38
55-59	208	233	-26	18	20	-2	-28
60-64	193	223	-30	15	19	-4	-34
65-69	132	139	-7	16	17	-2	-9
70-74	78	79	0	3	3	-1	-1
75+	232	254	-22	2	4	-2	-24
All	11,565	11,306	259	2,319	1,410	908	1,168

2008 and 2010 Sub National Population Projections

6.17 The net migration assumptions underpinning the 2008 and 2010 based SNPP are derived from pre-Census mid year estimates. The 2011-based SNPP utilises the rates and assumptions of the 2010-SNPP, but rebased to account for the 2011 Census population estimates at 2011.

6.18 As such none of the ONS SNPP are informed by the most recent ONS revised MYE. However, it is clear from Table 7 below that the net migration assumptions underpinning the 2008-based SNPP assumes a level of net migration closest to the latest trends.

Table 7 – Summary of net annual migration assumptions underpinning ONS SNPP

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	Av. Mig pa
2011	-	1600	1300	1000	800	700	600	500	500	500	400	-	-	-	-	-	-	-	-	-	-	790
2010	600	300	200	100	100	0	0	0	0	0	100	200	300	400	500	600	700	700	700	700	700	329
2008	1200	1000	900	800	700	700	700	700	700	600	700	800	900	900	1000	1100	1100	1100	1000	1000	900	881

3.6 Is the Council's reliance on a 10 year average (2001-2011) of 552 per year for migration and other changes reasonable? (Table 1 and 2 SHMA Addendum 1a). How does this compare with the assumptions used by the ONS in producing the 2011 interim population projections to 2021?

6.19 No, as we have set out above we do not consider the Council's approach to be robust. If a long term migration trend is to be pursued then we consider that this should be based on the pure revised (excluding 'other' unattributable factors as set out in table 2) net migration figures, as published by the ONS as part of the revised mid year estimates. This is summarised in our Table 2 above and totals 1,077 per annum.

6.20 However, we are concerned that the past migration trends are themselves suppressed by limited rates of past delivery.

3.7 The mid trend population increase 2011-2031 in Addendum 1a is 16,600 (as shown in the summary table Figure 15). This is broadly similar to the Demographic led POPGROUP scenario for the same period in Open House's West of England's Sub Regional Housing Study (16,967, Table 7.3) submitted on behalf of Bovis Homes/Taylor Wimpey (Reps 0251 and 0255), albeit derived differently. Does this similarity lend support to the Council's selection of the mid trend population projection?

6.21 No. The demographic led scenario included with our sub-regional assessment sought to assess future housing need based on the latest available data – this being the 2011-based ONS sub national population projections to 2021, 2010-based SNPP thereafter. However, since the preparation of this report the ONS has published revised mid year estimates 2002 – 2010, as well as the latest mid year estimates for the year 2011/12. The 2011-SNPP were published in September 2012, and whilst reflecting the Census 2011 population took no account of the revisions to mid year estimates published by the ONS in April 2013. The 2010-based SNPP were published in March 2012, and whilst setting out migration assumptions beyond 2021, these were published prior to the 2011 Census.

6.22 Furthermore, it is also important to note that our previous demographic led scenario resulted in a growth in the resident labour force of only 3,400 economic participants, based on economic activity rates adjusted to reflect the future change in pensionable age. This is significantly short of the Council's own job growth forecasts, and indicates that this level of housing provision is deficient in meeting economic led requirements.

3.8 What difference would be made to the averages in Table 1 (SHMA Addendum 1A) by rolling forward to include 2011-12 (as per ONS mid-year estimate for 2011-12 published 26 June 2013)?

- 6.23 As detailed in Table 2 above, migration based on the Council's consultants calculations would increase to 668 net migrants per annum based on long term migration trends, and 795 per annum based on short term trends. However, given the uncertainty of 'other unattributable' we, and indeed the ONS, consider it not appropriate to include this within any calculation of migration trends, and on this basis long term migration trends total 1,077 and short term trends 1,168 net migrants per annum.

3.9 Should the Council include the ONS data for 2011-12 in the SHMA? What is an appropriate cut-off date to any further updating of the housing assessment? If I were to consider that the Council's approach to calculating the housing need/requirement is now reasonable, could subsequent ONS outputs during the remainder of the Examination be ignored?

- 6.24 The Framework requires that a local authority's evidence base is up to date, and given the importance of this evidence in seeking to meet the full objective housing need of a housing market area it is essential that any new evidence is considered at any stage of the local plan process, until such a time as that local plan is adopted.

7.0 HOUSEHOLD/DWELLING PROJECTIONS

3.10 The choice of future headship rates (to convert the population projections to household/dwelling projections) appears one of the most critical factors in dispute and variations in this rate have a significant effect on outcomes. Is the Council's choice of the hybrid headship rate reasonable? (See B&NES 48, Tables 2abc and SHMA Addendum 1c, Figure 5)?

- 7.1 We do not consider it appropriate to plan for future housing growth based on the headship rates informing the 2011-based interim CLG household projections, as they assume recessionary trends which have and continue to suppress household formation.
- 7.2 It is therefore essential that any assessment of future household growth assumes a return to 2008-based headship rates during the plan period.

3.11 B&NES 48, paragraph 18 states: The Council had anticipated that the hybrid (Addendum 1c) outputs would lie between the 11-based and 08-based outputs of 1a. That would seem a logical expectation. However, the hybrid outputs are comparable to the 2011-based headship rate outputs. The Council seeks to explain the “technical” reason for this outcome in paragraph 19, but I still do not understand the logic of this outcome, given the significant difference in projected dwellings when using the 2011 headship rates (8,907 dwellings) and the 2008 headship rates (11,517) for the whole period. Further explanation for the unexpected outcome of the hybrid approach would be welcome.

7.3 In respect of the Council’s assumptions it is not entirely clear why the level of household growth resulting from the 2011-based headship rates are so similar to that based on its hybrid rates. We have received the model (Popgroup) input files relating to fertility, mortality, migration and economic activity rates in order to validate the forecasts within the Council’s evidence base which has highlighted that the data used in our modelling is based on more detailed and up to date assumptions, particularly relating to migration flows.

3.12 To what extent does any use of the 2011 headship rate reflect recessionary effects on household formation and, if so, to what extent should those effects be assumed to continue over any part of the plan period?

7.4 The recessionary influence on the 2011-based CLG household formation rates is well documented. The levels of household formation underpinning the latest ‘interim’ CLG 2011-based household projections are considered to be unrealistically low in the younger age groups when compared to the previous 2008-based CLG projections. This comparison is set out by the ONS in the Table 8 below. It shows how 26,300 less households per annum are projected to be formed in England in the 25-34 group alone. Incorporating the 35-44 age group (7,500 less households per annum) this would sum a total of -33,800 new households being formed in the 25-44 age group per annum.

Table 8: Household growth in England per annum, 2011-2021: Interim 2011-based CLG household projections vs. 2008-based CLG household projection

Age of Household Representative Person	2011-based projection		2008-based projection		Difference*
	Average annual change 2011-2021	annual 2011-2021	Average annual change 2011-2021	annual 2011-2021	
Under 25	-2,000		-6,000		3,200
25-34	23,000		49,000		-26,300
35-44	15,000		22,000		-7,500
45-54	17,000		11,000		6,600
55-64	50,000		47,000		3,100
65-74	46,000		48,000		-2,500
75-84	40,000		41,000		-1,400
85+	32,000		33,000		-200
All households	221,000		245,000		-24,900

*Indicative values; Source: Table 8, Page 17, Housing Statistical Release, 9 April 2013

7.5 It is not expected that these recessionary trends will continue in the long-term, and they should certainly not form part of an NPPF compliant local plan, which seeks to significantly boost the supply of housing.

7.6 Indeed the Planning Advisory Service (PAS, 10 July 2013) published 'Ten principles for owning your housing number: finding your objectively assessed needs', and state the following (paragraph 6, page 6) in respect of the use of projections when formulating housing targets as part of an NPPF compliant objective assessment of housing requirements:

"caution should be applied if the trends experienced in the past five years reflect a period of particular economic decline or likewise economic buoyancy. Projecting forward a recessionary trend may lead to concealed households not being catered for and an underestimate of the true level of household change. It is also important to understand how this may impact on any economic recovery and growth ambitions that the council have."¹ (Our emphasis)

¹ Page 6, Ten key principles for owning your housing number – finding your objectively assessed needs, Local Government Association, July 2013

7.7 As detailed above, it is therefore essential that any assessment of future household growth assumes a return to 2008-based headship rates during the plan period.

3.13 Given the outcome described above, does the hybrid rate used by the Council sufficiently avoid perpetuating any recessionary effects over the plan period? If not, what headship rate should be used?

7.8 It seems logical that in planning for future housing growth that the suppression in household formation is rectified. As such we consider that a return to the 2008-based household formation rates should be factored in early in the plan period in order to avoid exacerbating the suppressed housing need evident in 2011, as demonstrated in paragraph 6.8 above. However, whatever the means by which a household change projection for B&NES moves between the 2011 based and 2008 based headship rates, supply should be increased during the early part of the plan period so that suppressed need can be alleviated from the outset.

7.9 A return to the 2008 headship rates will release suppressed need, however, it must also be recognised that inherent with all CLG projection series, and particularly the 2011-based projections is a degree of concealed or hidden households. Evidence to support this claim is found in Chapter 6 of the West of England SHMA 2009v2, which demonstrates that during the last decade, when the 2008 based headship rates were considered the norm, current or backlog housing rose from 1,115 households in housing need to 2,787 in 2007, a 150% increase, considerably higher than any other WoE district (see Table 6.3, WoE SMHA v2). Of that number, based on the share of need by type evidence presented at Table 6.4 of the WoE SHMAv2, it is likely that 26% (the homeless and sharing categories) were without a home (whether suited to their needs and circumstances or not).

7.10 Accordingly, on the evidence before us, it appears that current need for an additional home (as opposed to need for a different home) has risen from 290 in 2002 to 730 in 2007. In the language of NPPG, this is a deteriorating market signal that merits an increase in supply over and above that of the identified need.

3.14 Should aspects of housing need (e.g. homelessness, concealed households etc) be added at this stage to the baseline household projection or are they better considered in the context of the need for affordable housing?? (This is a disputed matter highlighted in SOCG, paragraph 14).

- 7.11 Yes. CLG household projections do not account for those households which are hidden or concealed – by their very nature these households are hidden within the projections. The 2011 Census reports that within B&NES in 2011 there were a total of 500 concealed family households, that is however not to say that there are other concealed households present within B&NES that were not captured through the Census. The figure identified in the Census should be considered in the light of the trend identified in WoE SHMAv2, figure 6.3, highlighting a persistent problem of concealed households whose needs should be addressed by increasing supply.
- 7.12 It is considered that concealed households should be treated in addition to the household projections, particularly as the Council's assessment of affordable need does not appear to have established the extent of existing households in need – one of the requirements of the CLG SHMA guidance and the NPPG. This is a fundamental flaw in the SHMA.

8.0 LABOUR SUPPLY FOR PLANNED GROWTH

3.17 Does any more recent evidence (since the hearings in January 2012) indicate that the Council's jobs target is too low? What is the Council's view of Experian's February 2013 jobs forecast referred to in Open House's West of England's Sub Regional Housing Study (Table 7.2) submitted on behalf of Bovis Homes/Taylor Wimpey (Reps 0251 and 0255)?

- 8.1 The Experian forecasts are updated on a quarterly basis. They are independently published and are provided by an established and well respected forecasting house. At the very least, they show what the economic potential of the West of England area is over the remainder of the plan period. The following table compares the growth in workforce jobs based on the latest quarterly forecast update, which demonstrates a consistently higher level of job growth for B&NES as well as the wider LEP area than currently being planned.

Table 9: Workforce Job Growth

	Workforce job growth 2011-2031 ('000s)	
	Apr-13	Nov-13
B&NES	16.72	17.33
Bristol	75.47	65.65
North Somerset	13.58	14.78
South Gloucestershire	29.47	31.89
WoE Total	135.24	129.65

Source: Experian

8.2 The Experian forecasts therefore provide a strong indication that the Council is significantly under providing for trend-based job growth.

3.18 Assumptions about future economic activity rates appears to be the other critical factor in dispute and the choice of rates has a significant effect on the population required to support planned job growth.

8.3 There is no one recognised rate of change in economic activity rates, and for this reason we consider that the Council adopt the approach recommended by NPPG, as outlined in paragraphs 6.10 to 6.11 above, which seeks to match plan period job growth with growth in the working age population.

8.4 As previously stated, our assessment (NMG 1168) shows that growth of 950 households per annum will result in labour force growth of 13,600 by 2031 if the population aged 16 to 64 is assumed to be the labour force, or 15,200 if the labour force age range is increased to 68 (the planned SPA for the mid 2030s). Neither figure matches Experian's two most recent workforce job growth projections. The actual shortfall is likely to be greater, given the high number of students that swell the population aged 16 to 24 in Bath and North East Somerset. In line with NPPG, the identified shortfall is cause to consider increasing housing supply so that it is greater than the identified need to house 950 households per annum.

3.19 Is the SHMA's assumption about increasing economic activity rates reasonable – will past trends of increased rates continue (Addendum 1a, paragraph 23-28 Figures 10 and 11.

- **To what extent should projecting forward recent trends be tempered by uncertainty about future behaviours?**

We do not consider that the Council's assumptions with regard to future economic activity rates are valid. The impact on future labour force provision of these rates not being realised is of great concern, and as such we consider that a more prudent approach would be to align future housing provision on the scale of change in the working age population necessary to satisfy projected labour demand, in line with NPPG (see 318)

- **To what extent is the incorporation of such trends now accepted practice in employment forecasting for planning purposes?**

8.5 See answer provided to question 3.18 – follow the NPPG method Why is the growth in the student population seen as contributing to the future labour force (see Addendum 1a, paragraph 23-28, Figures 10 and 11) when the SHMA treats this population as transitory (see question under Student Housing below).

8.6 We would query the Council reliance on the student population to assist in achieving its job growth requirements, and this in itself raises questions as to the extent to which the Council has properly considered the need to balance jobs and labour force.

3.20 Overall, will the planned housing requirement (12,700 to 2029), facilitate and avoid constraining reasonable expectations of economic growth over the plan period? (Paragraph 29, B&NES 48 states that the Council consider that an appropriate employment-led housing requirement is 7,100. Table 6 indicates that if participation rates were unchanged the future dwelling requirement would be between about 11,100 and 14,100 depending on the choice of headship rates.)

8.7 We are firmly of the opinion that the level of housing proposed will constrain economic growth. Our own demographic-led scenario contained within our West of England Sub-Regional Housing Study results in labour force growth of only 3,400 economic participants (allowing for a change in pensionable age). We consider that in order to provide for sufficient labour force growth to meet B&NES element of the LEP job growth requirement (14,260 jobs) it will be necessary to at the very least plan for average annual growth of 950 households per annum, increasing supply further if the ambition is to meet Experian's job growth forecast of 16,780 jobs (2011-2031).

Other factors

3.21 How has the Council's SHMA/housing requirement taken full account of relevant market and economic signals (NPPF paragraph 158)?

- **What factors are relevant here?**

8.8 The relevant factors are market signals of price, most notably affordability, and signals of quantity, including past rates of delivery and the incidence of and trends in concealed households.

- **Does the objective assessment of need/housing requirement require further adjustment to reflect such signals?**

8.9 The assessment must address the needs of all existing and would be households who want a home but are currently without one, as well as planning to meet future need. Accordingly, housing supply should be increased above the level of need that is identified over the plan period and 'mop up' current need, which would require an increase of at least 500 homes to meet the needs of concealed households identified in Census 2011 and evident as a persistent problem in SHMAv2 2009.

8.10 Rising prices and affordability is an acute problem in Bath and North East Somerset, as evidenced in the SHMA Update 2013 (draft) figure 21 and paragraph 4.8, and our own analysis of relative affordability depicted in Appendix 6, attached) Clearly, B&NES is one of the least affordable districts in both the UK and relative to the West of England. This circumstance merits an increase in supply over and above projected need in order to help constrain house price inflation and facilitate and easing of acute affordability problems. One benchmark for such an increase would be to make good any past shortfall in delivery, currently estimated to be 1,169. This level of increase would also meet the needs of identified concealed households in full and facilitate an increase in labour supply.

Affordable housing

3.23 Is the ORS methodology for assessing the affordable housing requirement consistent with the applicable national guidance (see 3.2 and 3.4 above)?

8.11 We do not consider that the ORS methodology conforms with the established CLG methodology, not least because it fails to account for backlog.

3.24 Does the methodology adequately take account of the existing backlog of affordable housing needs?

8.12 We can find no reference in the SHMA to any assessment of existing backlog. We understand from B&NES43, paragraph 3.15 that the Council consider that these people will be counted within the household projections at the time new household's form, and to avoid double counting the Council has not undertaken an assessment of existing backlog.

- 8.13 This reasoning seems illogical, as in many instances the existing backlog is made up of those households which are concealed or hidden, and by their very nature unable to form their own household. This group of people is simply lost within the Council's calculations.

Student housing

3.30 On the basis of the current intentions of both Universities, as summarised in the Council's Student Numbers and Accommodation Requirements Evidence Base (July 2013) is it reasonable to assume that future growth in the student population will not add to housing pressures (B&NES 43, last paragraph under section 3.6)?

- 8.14 It is apparent that the Council is reliant on the future provision of student halls of residence to accommodate future growth in student numbers. Such an approach fails to acknowledge the extent to which the student population participate in the private rental market, and the extent to which this will continue will to a large part depend on the price competitiveness of the rental market relative to halls of residence.
- 8.15 Indeed paragraph 3.27 of the Council's SHMA recognised that:

"A significant part of the total student population lives outside of halls of residences in their own home, which includes those living in the private rented sector. Therefore, students living in private rented accommodation are likely to have a significant role to play in the housing markets of Bath and more widely across B&NES. Further, any changes to the private rented sector (for example, if supply were to reduce due to benefit reform) could increase demand for remaining stock."

Calculating the overall housing requirement

3.32 On the assumption that I find the Council's methodology reasonable in identifying a base housing need of 7,560 (mid trend migration with hybrid headship rates (Table 2b, B&NES43) is the addition of the local plan shortfall of 1,169 (as per ID/28, paragraph 1.37) still justified?

- 8.16 No matter what housing requirement in future years is deemed acceptable, the shortfall against past requirements must be added as acknowledged by the Council.

3.34 Should the 5 year supply be calculated as the Council suggest (B&NES 48, paragraph 39) on the basis of the identified housing need plus local plan backlog (i.e. 8,727) or on the overall planned provision of 12,700. My preliminary view is that it should be the latter for the reasons given in ID/40, paragraphs 13-15.

8.17 We agree with the Inspector's preliminary view as set out in ID/40 in relation to the basis for calculating 5 year land supply. The 5 year supply figure should be calculated based on the overall housing requirement that the Core Strategy plans for and not on the basis of the selected household projection from the SHMA. The 5 year supply figure is a mechanism which is intended to ensure that a sufficient supply of land for housing is made available to meet housing needs and ensure that the planned delivery of housing is achieved in accordance with the requirement of the NPPF to 'boost considerably the supply of land for housing'. We therefore consider it inappropriate for the 5 year supply to be considered against a different and lower figure to that which is planned for within the Core Strategy.

9.0 CONCLUSION

9.1 This Statement highlights a number of areas in which we consider the assumptions, calculations and data used to inform the Council's SHMA to be flawed. The consequence of this is that the recommendations in the SHMA is insufficient and the proposed level of housing in the Proposed Changes Core Strategy falls significantly short of the objectively assessed housing needs of B&NES.

9.2 Removing the 'other unattributable' component of migration from the Council's projections (as advised by ONS) and updating the projections to reflect the latest available data has been shown to result in the objectively assessed housing needs of B&NES becoming 17,168 dwellings (2011-2029). When taking account of the historic shortfall, backlog of affordable housing, worsening affordability and rising prices, we consider that the Core Strategy should identify a minimum housing requirement of between 18,000-20,000 homes to 2029.

Appendix 1
Correspondence between BANES and Bristol City Council

From: Colin Chapman <colin.chapman@bristol.gov.uk>
Sent: 23 January 2013 13:47
To: Simon De Beer
Cc: Sarah O'Driscoll
Subject: Re: B&NES Core Strategy
Attachments: B&NES CS Informal comments Jan 2013.doc

Simon - thank you for your email - Sarah has asked me to respond. I've attached some informal observations which I hope will be of assistance.

As consideration of these matters now appears to be at quite an advanced stage with your report to Council planned for 28 February, we are proposing to brief the Mayor on the emerging thinking - the briefing will be on 6 February. We will be able to give you a more formal steer on Bristol City Council's response after that meeting. We expect that the Mayor may wish to inform and consult with Bristol local ward members in the affected areas following his briefing.

Please let me know if you have any further questions. We will be very happy to meet to discuss these matters further.

Regards, Colin

Colin Chapman
Local Plan Team Manager
Strategic Planning Team
2nd Floor, Brunel House
St George's Road
Bristol BS1 5UY

>>> Simon De Beer <Simon_DeBeer@BATHNES.GOV.UK> 13/01/2013 17:19 >>>
Sarah

It is evident from ongoing work in B&NES on the amendments to the B&NES Core Strategy that B&NES is likely to need to allocate land for a residential led scheme on the edge of Bristol within B&NES to meet our housing land requirement.

Whilst we still have not yet had the final report from ORS on the housing land requirement, interim reports have indicated that even an Oxford central based growth target would require in the order of 16k dwellings. As we discussed previously, our current supply is only around 10k dwellings.

We have been assessing the most appropriate options to meet the housing requirement. There are opportunities to increase the housing land supply at Bath by taking land out of the Green Belt (having already exhausted the brownfield opportunities) for around 2000 dwellings but a figure beyond this would do unjustifiable harm to the World Heritage Site and the AONB. We can also increase the housing supply in the Somer Valley area by around 500 additional dwellings above the existing commitments but this is already at the boundary of acceptability in light of the existing level of out-commuting from this area and the difficulties in attracting new employment to these towns. We will also increase the contribution from larger villages to an extra 500 dwellings but as you are aware there are sustainability limits to rural growth.

Therefore, looking outside the Bath housing market area, there are opportunities to remove land from the Green Belt at Keynsham to provide around an extra 700 dwellings.

The above opportunities provides around an extra 3,700 but this still falls significantly short of the growth requirements of an Oxford Central growth scenario. Therefore, it appears on balance, that the housing requirement in B&NES is sufficient to override both the Green Belt and the shortcomings of allocating land on the edge of Bristol, as helpfully set out in the recent note from Colin Chapman. Such an allocation would be in order of up to 700 depending on the infrastructure constraints.

It is likely that the Whitchurch area presents the most deliverable location in light of the dependency of land at Hicks Gate on a cross boundary scheme in order for it to be a well planned, deliverable and sustainable. It is therefore likely , for the reasons that I set out above, that I will need to recommend to Council on 28/2/13 that land at Whitchurch is removed from the Green Belt for a residential led scheme. In light of the unavoidable impact of development in this location on the adjoining parts of Bristol, the planning requirements for any such scheme will need to be developed in conjunction with Bristol City Council through our site allocation plan (the PlaceMaking Plan). However there is the opportunity to set out in the B&NES Core Strategy, the overarching development requirements needed to ensure a good scheme and to minimise any adverse impacts for Bristol residents.

I appreciate that there is limited time available, but please will you let me know if are aware of any obstacle on the Bristol side of the boundary that would prevent such a development coming forward or would limit its capacity. Please will you also make me aware of any strategic site requirements that Bristol would require in the allocation of the site. I envisage that there are particular transport impacts in Bristol that would need to be addressed and to this end I am asking my transport colleagues in B&NES to liaise with their counterparts in Bristol to identify and transport related site requirements.

I appreciate that in reviewing Green Belt boundaries, the NPPF also requires that we have regard to the longer term and this is an issue which I think would benefit from mutual discussion. We will also need to consider whether a more structured working arrangement between our two authorities is needed in order to take this forward as well as liaison between our respective Members/ political leaders on this issue. Please contact me if you wish to discuss any aspect of this further.

Simon de Beer

Policy & Environment Manager
Bath & North East Somerset



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Appendix 2

Methods used to establish the sub national population estimates

Date: 30 April 2013
Coverage: England and Wales
Theme: Population

Methods used to revise the subnational population estimates for mid-2002 to mid-2010

1. Introduction

This paper forms part of the release of the [revised mid-2002 to mid-2010 subnational population estimates for England and Wales](#). The revised estimates go down to local authority (LA) level and create a continuous series between the mid-2001 and the mid-2011 population estimates.

This paper summarises the methods used to create the revised estimates, and also includes case studies of three LAs – Newham, Luton and Manchester – to demonstrate how the methods have worked in practice. The case studies begin on page 14. All data and reports referred to are available via the ‘References and related publications’ section on page 23.

2. Background

The population estimates for mid-2002 to mid-2010 have been revised to bring them into line with the official mid-2011 estimates, which are based on the 2011 Census (27 March 2011) estimates of the usually resident population, plus the effect of births, deaths and migration up to 30 June 2011.

The former mid-2002 to mid-2010 estimates were based on change as a result of published data on births, deaths and migration since mid-2001. If the 2011 Census estimates had not been available the equivalent mid-2011 population estimates for each LA would have been different: in some cases lower, in other cases higher. More analysis is provided in the statistical bulletin accompanying this release (available via the link above).

This paper describes how the potential causes of these differences have been determined, and how they have been distributed across the decade to create the revised mid-2002 to mid-2010 series.

These revisions should be seen in the context of the revised national (England and Wales) mid-2002 to mid-2010 estimates, which were published on 13 December 2012.

3. Definitions and principles

The process of creating annual population estimates through the addition of the effects of births, deaths and migration is referred to as ‘rolling forward’. In this paper the estimates rolled forward from mid-2001 are referred to as the ‘rolled-forward mid-2011 estimates’, and those created using the 2011 Census estimates as the starting point are referred to as the official (Census-based) mid-2011 estimates.

All annual population estimates are based on the usual resident population, which excludes the effects of short-term international migration. This means that immigrants who do not intend to stay in the UK for at least 12 months are excluded. Conversely, emigrants who intend to stay outside of the UK for less than 12 months are included.

The factors contributing to the difference between the rolled-forward and official mid-2011 estimates are referred to in this paper as 'components of difference'.

A key principle of the national mid-2002 to mid-2010 revisions was that components of difference would initially be identified at national level, as they could not reliably be derived directly at subnational level. However, it is also essential that the components of difference at LA level sum to the national totals. This can mean one of two things:

1. Components of difference which existed in the national revisions have been broken down to subnational level with their original national total being retained.
2. Components of difference which only exist at subnational level (and so did not feature in the national revisions) have been processed so that their national sum is zero.

For each component methods have been applied consistently across the country. However, exceptions to this principle have been applied to two LAs where specific issues were identified: Harrogate, and Oadby and Wigston. These are explained in more detail in due course.

In practice there is substantial estimation around most of the identified components of difference. Instead they should be considered as best approximations, based on the evidence available, of how the difference between the rolled-forward and official mid-2011 estimates arose.

As with the national revisions, once identifiable differences have been taken into account the remaining difference for each LA has been allocated to a general 'Other' component rather than being arbitrarily, and potentially incorrectly, assigned to specific causes. This approach is in line with international best practice.

4. Summary of components of difference

The official estimate of the mid-2011 population of England and Wales is 56,171,000, which is 464,000 higher than the rolled-forward mid-2011 estimate of 55,707,000.

The revised national population estimates for mid-2002 to mid-2010 attributed this 464,000 difference as shown in Table 1 (overleaf). A detailed explanation of what is meant by each of these components and how they were derived was presented in the report 'Methods used to revise the national population estimates for mid-2002 to mid-2010', which accompanied the release of the revised national estimates in December 2012.

Table 1: Components explaining the difference between the mid-2011 official and mid-2011 rolled-forward estimates for England and Wales: summary

Components	Impact on difference	Remainder
Initial difference	n/a	464,200
EU8 immigration adjustment	250,000	214,200
Republic of Ireland migration roll-back	65,800	148,500
Migrant switcher roll-back	37,000	111,500
Visitor switcher roll-back	-7,500	119,000
Armed forces adjustment	-7,100	126,100
Cross-border migration correction	2,400	123,700
Mid-2009 asylum seekers and visitor switchers correction	- 11,600	135,300
Removal of historic processing adjustments	800	134,500
Other	134,500	0

Note: totals may not sum because of rounding.

This report summarises these national components and explains how they have been broken down to LA level. It also explains a number of components that did not affect the national total but did have an impact at LA level:

1. Replacement of international immigration flows for the years ending mid-2006 to mid-2011 with flows based on a new method developed as part of ONS's Migration Statistics Improvement Programme. This change also impacted on the international emigration values.
2. Changes to the way in which specific adjustments relating to the Home Armed Forces (HAF) have been distributed.
3. Removal of the separate school boarders component from the mid-year estimates.
4. Adjustments to correct for specific issues identified in two LAs: Harrogate, and Oadby and Wigston.

This paper details the methods used for each component and then provides case studies of the effect of the various components of difference in selected LAs.

5. Note on the impact of rounding and constraining

When the revised national estimates for mid-2002 to mid-2010 were created, some components of difference were affected by rounding and were not constrained back to the totals shown in Table 1. This meant that the published estimates had components of difference which were very slightly different. For practical purposes these differences are inconsequential and this paper refers throughout to the Table 1 values. However, users who download the components of difference file will be aware of the small differences.

For the subnational processing, in most cases the methods used to derive the LA-level components of difference initially led to non-integer values (values that are not a whole number), both for LA totals and the individual age/sex groups within them. For each component these were then rounded and constrained back to the separate totals for England and for Wales from the revised national back series.

This rounding and constraining process will have led to small changes to individual age / sex / LA values. However, the effect is minor. Furthermore, given the uncertainty in the estimation process, the true 'real world' values in each of these cases cannot be known.

6. International migration

There are several aspects of the revisions to international migration values at LA level:

i) Switch to the new method immigration breakdown

The previous series of subnational estimates used a modelling approach to determine the number of long-term international immigrants. This approach took national and regional immigration totals from the International Passenger Survey (IPS) and used a range of demographic, social and economic measures to model how many were likely to have gone to each LA.

In November 2011, as part of its Migration Statistics Improvement Programme, ONS published immigration totals using an improved method for the years ending mid-2006 onwards. At the time the new method totals were described as 'indicative' and did not replace the official totals created using the old method. However, following analysis and user consultation, the new method has been adopted as the way forward for future estimates.

In addition the new method (indicative) estimates for the years ending mid-2006 to mid-2011 have been applied to the revised estimates, replacing the previous international immigration figures. However, for the years ending mid-2002 to mid-2005 the existing immigration flows have been retained as the administrative data required by the new method are not available.

The 'References' section of this report contains links to further information on both old and new methods.

ii) Impact of the new immigration breakdown on emigration figures

Estimates of long-term international emigration from each LA are also created using a modelling process. As the international immigration figures are used in the model, the model has been re-run with the new immigration data for the years ending mid-2006 to mid-2011.

The emigration values from the model are also used to inform calculation of the number of emigrant visitor switchers (people whom the IPS data count as originally intending to be outside the UK for less than 12 months, but who actually stay abroad longer and so become long-term emigrants). Therefore the LA-level emigrant visitor switcher figures for the years from mid-2006 onwards have also been revised.

iii) Additional EU8 immigration

Summary of national adjustment

The revised national back series included 250,000 additional long-term immigrants from the EU8, the eight countries of central and eastern Europe that joined the European Union in 2004: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia. These 250,000 were immigrants who were believed to have been missed from the original immigration estimates (see national back series methods paper for explanation). They were distributed over time as follows:

Table 2: Distribution over time of additional 250,000 EU8 immigrants to England and Wales

Year ending	Additional EU8 immigrants
Mid-2005	40,000
Mid-2006	40,000
Mid-2007	56,000
Mid-2008	56,000
Mid-2009	35,000
Mid-2010	13,000
Mid-2011	10,000
Total	250,000

Note: the addition of migrants to the year ending mid-2011 only covers the period up to Census Day.

LA-level breakdown for years ending mid-2005 to mid-2010

The additional flows for the years ending mid-2005 to mid-2010 have been broken down to LA level using the distribution of workers with a European Union (EU) nationality other than British.

The distribution has been derived from the new immigration breakdown methods described above. Part of the new methods involves constraining administrative sources data on the number of immigrant workers in each LA to 'subcontinental' worker totals from the IPS, with the EU (specifically all EU nationalities apart from British) forming one subcontinent grouping.

The reason why the additional EU8 migrants have been distributed using the overall EU grouping rather than an EU8-specific distribution is that all non-British EU workers – both EU8 and other EU – have been suppressed proportionately by the constraining process. Therefore if the missing workers are added using the geographic distribution of all EU workers (regardless of where in the EU they actually originate), the true numbers for both EU8 and other EU workers are restored.

This concept can be difficult to visualise, so here is a worked example based on two fictitious LAs:

- i. Suppose that nationally in any one year there are 300,000 EU immigrant workers. 200,000 of these are included in the IPS-based totals, and 100,000 are EU8 workers who have been missed.
- ii. Also suppose (for simplicity) that all of the EU8 workers who came into the country were missed.
- iii. The new immigration method distribution suggests that 1% of EU workers go to Dorsetshire, and another 1% to Sodor. This means that in the existing (IPS-based) totals each area is allocated 2,000 EU workers, as opposed to the 3,000 each area would have had if all EU workers had been included.
- iv. Suppose too that all of Dorsetshire's EU immigrant workers are from EU8 countries, but all of Sodor's come from the rest of the EU. This means that in the IPS-based totals (where all EU8 immigrants are missing), Dorsetshire has wrongly been allocated 2,000 immigrants originating in the rest of the EU, whereas Sodor has been given 1,000 too few.
- v. Applying an EU8-specific distribution (if known) to the missed 100,000 EU8 migrants would not be appropriate. It would add 3,000 to Dorsetshire (giving a total of 5,000) and none to Sodor (leaving the total at 2,000).
- vi. However, if the EU worker distribution were used, it would add 1,000 to both Dorsetshire and Sodor, giving the correct total of 3,000 in each of them.

In the real immigration estimates only a proportion of EU8 workers have been missed each year, and it is unlikely that there are any LAs where all EU workers are of EU8 nationality. But the principle holds: using the EU worker distribution is the best option.

In practice not all missed EU8 immigrants are workers. However, most EU8 immigrants do work and, as developing specific methods for non-workers would be complex and subject to considerable uncertainty, the EU worker approach has been applied to all 240,000 additional EU8 immigrants in the years ending mid-2005 to mid-2010.

Because of the small sample size in the part of the administrative data which determines the split by subcontinent at LA level, using an EU worker distribution for each individual year would cause substantial year-on-year variation and is not considered robust. Therefore a single five-year average distribution has been applied to all six years, based on the combined EU worker distributions for the years ending mid-2006 to mid-2010 (no EU worker distribution is available for the year ending mid-2005).

LA-level breakdown for year ending mid-2011

The new method processing for the year ending mid-2011 did not constrain to subcontinent totals but instead constrained just to the full 'all immigrant' national IPS estimate. Therefore, using a similar reasoning to the Dorsetshire / Sodor example above, the 10,000 EU8 workers added in that year have been distributed to LA level using the all immigrant distribution.

Transfer from England to Wales

The separate totals for England and for Wales in the revised national back series were derived from the new method all immigrant distribution as it had not been identified at that stage that using the EU worker distribution was a better means to determine the LA values for the years ending mid-2005 to mid-2010. The need to match those published national totals has had a small effect on LA totals, with a net transfer of around 1,000 from England

to Wales. However, this is a minor adjustment which is considered acceptable given the degree of uncertainty around the true values.

Age/sex breakdown

The revised national back series split the additional EU8 immigrants by age and sex using the national distributions from the new method all immigrant estimates (with the values for the year ending mid-2006 also being applied to the year ending mid-2005). All LAs have been assumed to share the national age/sex distribution for each year.

iv) Republic of Ireland migration roll-back

The revised national back series included an increased net flow between the Republic of Ireland and the UK of 65,800, comprising 23,450 more immigrants and 42,350 fewer emigrants. This increase was spread evenly across the seven years between the year ending mid-2002 and the year ending mid-2008. The justification for this was the roll-back of a new method which had originally only been applied from the year ending mid-2009 onwards.

In the former back series the flows between the Republic of Ireland and the UK were processed separately from other international migration flows. This means that they had their own specific LA-level distributions. In the revised back series these distributions have been applied to the emigration flows for all years and the immigration flows up to the year ending mid-2005.

As the Republic of Ireland is part of the EU then for the additional immigrants in the years ending mid-2006 to mid-2008 the new method EU worker distribution has been applied, on the same logic that it was applied to the additional EU8 workers. In this case a single three-year average distribution has been applied based on the combined EU worker distributions for the years ending mid-2006 to mid-2008.

The age/sex breakdown of the revised flows to and from the Republic of Ireland matches the distribution in the former flows for each year, with the same age/sex distribution in all LAs.

v) Migrant switcher roll-back

The International Passenger Survey (IPS) asks people how long they intend to stay in their country of destination (either in the UK for arrivals, or out of the UK for departures). If they are staying 12 months or more they are regarded as a migrant; if they are staying less than 12 months they are regarded as a visitor.

However, some people who originally intend to stay for 12 months or more (and so are initially considered to be migrants) actually stay for less than 12 months and so are re-classed as visitors. Such people are termed 'migrant switchers' and ONS migration estimates include adjustments for this.

In the former back series the methods for estimating the number of migrant switchers had only been applied to the estimates from the start of 2004 onwards. The revised national estimates for mid-2002 to mid-2004 extrapolated the methods to cover the full decade by assuming that the change caused by the new methods during the first six months of 2004 would be representative of the rate of change in the first part of the decade. This assumption led to the changes shown in Table 3.

The overall effect was that migrant switcher net flows were reduced by 37,000, with the result that net international migration was increased by 37,000.

Table 3: Changes to England and Wales migrant switcher estimates due to roll-back of new methods

Year ending	Inflows	Outflows	Netflows
Mid-2002	-6,800	8,000	-14,800
Mid-2003	-6,800	8,000	-14,800
Mid-2004	-3,400	4,000	-7,400
Total	-17,000	20,000	-37,000

The changes to the migrant switcher flows have been broken down by LA, age and sex using the same distributions as the former flows for each year.

vi) Visitor switcher roll-back

Visitor switchers are people who originally intend to stay for less than 12 months but then go on to stay for 12 months or more (either in the UK for arrivals, or out of the UK for departures). This means that they are re-classed from visitors to migrants. Such people are termed 'visitor switchers' and ONS migration estimates also include adjustments for this.

As with migrant switchers, in the former back series the methods for estimating the number of visitor switchers had only been applied to the estimates from the start of 2004 onwards. The revised national estimates for mid-2002 to mid-2004 extrapolated the methods to cover the full decade by assuming that the change caused by the new methods during the first six months of 2004 would be representative of the rate of change in the first part of the decade. This assumption led to the changes shown in Table 4.

The overall effect of this is that visitor switcher net flows were reduced by 7,500, with the result that net international migration was also reduced by 7,500.

Table 4: Changes to England and Wales visitor switcher estimates due to roll-back of new methods

Year ending	Inflows	Outflows	Netflows
Mid-2002	-10,600	-7,600	-3,000
Mid-2003	-10,600	-7,600	-3,000
Mid-2004	-5,300	-3,800	-1,500
Total	-26,500	-19,000	-7,500

The changes to the visitor switcher flows have been broken down by LA, age and sex using the same distributions as the former flows for each year.

vii) Mid-2009 asylum seekers and visitor switchers correction

The revised national estimates for mid-2009 included corrections to processing errors in the former values for both asylum seekers and visitor switchers. The result of this was:

- 300 additional asylum seeker immigrants,
- 600 additional asylum seeker emigrants, and
- 11,400 additional visitor switcher emigrants.

The net effect of the correction was a reduction of the mid-2009 population estimate by 11,600, which fed through to an identical reduction in the mid-2010 estimate.

The corrected asylum seeker totals were run through the standard mid-year estimates processing for distribution by LA, age and sex, so all existing values have been replaced by the new values.

The corrected visitor switcher totals were used in the re-processing of visitor switcher emigrants referred to in Section 6ii, so no separate action was required.

viii) Note on processing error

A processing error has been identified in the revised national population estimates for mid-2002 to mid-2010. This affected the age/sex distribution of visitor switcher immigrants to England in the year ending mid-2003, and therefore the population estimates for mid-2003 and subsequent years up to mid-2010. The maximum error for any age/sex group was 1,300 (0.4% of the total) for females aged 17 in the estimate for mid-2003, with the error reducing through the decade to zero in mid-2011.

As the error is in the sex/age distribution, the total population estimates for each year have not been affected. The impact of the error has been assessed as minor and, in accordance with ONS's Population Statistics Revisions Policy, the published estimates will not be revised to correct the error. The revised subnational estimates have been designed to be consistent with the national back series, and so also include the error. However, the effect on any one local authority is negligible.

7. Armed forces**i) Home Armed Forces (HAF)**National armed forces adjustment

Table 1 indicates an 'Armed forces adjustment' of -7,100 in the revised national back series. This was partly due to a correction of processing errors in the former estimates, which have also been corrected at LA level. However, the main driver of the adjustment was a change in the method for the annual counter-adjustment to the civilian population, described below.

Counter-adjustment to civilian population to account for change in HAF numbers

Every year there is a net transfer of people between the civilian population and HAF: this can be either positive or negative, depending on whether the size of HAF gets larger or smaller.

The total size of HAF is derived each year from data provided by Defence Analytical Service and Advice (DASA). However, any change to the size of HAF needs to be offset by a counter-adjustment to the civilian population.

The counter-adjustments at national level need to be broken down to LA level as ONS does not have specific data on the origin or destination LAs of people joining or leaving HAF. In addition the moves will not be picked up in the standard internal migration estimates as these are based on NHS GP registrations, whereas large HAF bases have their own medical system.

For the revised LA-level back series the revised national counter-adjustments were distributed across LAs in proportion to the distribution of the HAF population. This means that new personnel are taken from areas with a HAF presence, and departing personnel are placed back into the civilian population in HAF areas. It is recognised that the reality is more complex, but this approach is considered superior to distributing the counter-adjustments evenly across the country. Moreover, there are insufficient data available to create a 'real world' distribution.

Service dependents overseas (SDOs)

Every year there is a change in the number of SDOs – specifically dependants of HAF personnel who are accompanying the personnel overseas. Each year's change to the number of SDOs is offset by a counter-adjustment to the civilian population of England and Wales.

The revised national back series had no change to the number of SDOs. However, the previous back series distributed SDOs to LA level based on the distribution of the total population. As with the adjustment to take account of change in HAF numbers, the revised back series has distributed the SDOs using the distribution of HAF. This is logical: if SDOs accompany the service personnel overseas, it would seem likely they would remain with them upon return to England and Wales.

ii) Foreign Armed Forces (FAF)

The revised national back series had no changes to the number of FAF personnel present in England and Wales. However, recent analysis of 2011 Census data revealed that the FAF total for Harrogate LA in the mid-2011 estimates was about 400 too low, although the figures were satisfactory for all other LAs.

The difference in Harrogate has been incorporated into the revisions step by step from the mid-2009 estimates onwards so the Harrogate FAF total does not have an unusually large step change in any one year. However, in each set of estimates the subnational FAF figures have been constrained to the published national back series totals. To achieve this the FAF totals for other LAs have also been scaled down slightly (by about 5% each in the mid-2011 estimates, less in mid-2010 and mid-2009).

There has been no impact on the overall mid-2011 population of each LA. The components of change for the mid-2011 estimates had not previously been published and therefore the FAF members excluded due to the scaling of the FAF component have instead been included as part of the civilian population, and will be switched back in the processing for the mid-2012 estimates.

There has been an impact on LA population sizes in the revised mid-2009 and mid-2010 estimates. Harrogate has an increased population (reflecting the presence of the additional FAF personnel) and other LAs with FAF have had their populations slightly reduced.

8. School boarders

The former mid-year estimates included a specific component for school boarders. Data were obtained on the number of pupils in each boarding school and these were added to the population of the relevant LAs. A counter-adjustment was applied to represent the fact that the boarders were no longer in their home LAs, and this was distributed across the country.

The assumption behind this was that boarders would usually remain registered with a NHS GP in their home LA, rather than transferring to one in their school LA, and that therefore they would not be picked up in the usual internal migration data. However, recent research has shown that this assumption is no longer applicable: in practice boarders usually do register with a GP in their school LA, and this is Government policy.

The consequence of this is that people either starting or finishing at a boarding school in a different LA have their move double-counted, causing error. To overcome this, the revised mid-2002 to mid-2010 estimates do not have a specific school boarders component.

The effect of removing the double-counting is generally small: for example, in the rolled-forward mid-2011 estimates no LA was affected by more than 500 people.

9. Cross-border migration correction

The revised subnational back series contains small corrections to bring the LA-level estimates of cross-border migration into line with ONS's official estimates over the decade. This is the same approach as in the national revisions, where there was a net reduction of 2,400 in the flow from England and Wales to Scotland and Northern Ireland over the decade.

10. Removal of historic processing adjustments

The revised national back series added a total of 800 to the estimates for the years ending mid-2002 to mid-2006 due to the removal of small historic processing adjustments which had not been allocated to any specific cause. This very minor difference has been distributed across the country at LA level.

11. Other

General

Once all the components of difference identified above have been added to the rolled-forward mid-2011 estimate, for each age and sex group within each LA the remaining difference from the Census-based mid-2011 estimates has been classed as 'Other'.

As at national level, the Other component has been split across the decade on a cohort basis, meaning that it takes account of the fact that individuals age as the decade progresses. An example of how this works is as follows:

1. Suppose that in Dorsetshire, once all identified components have been added, the rolled-forward mid-2011 estimates still have 100 fewer females aged 28 than do the Census-based mid-2011 estimates. Therefore the Other component for 28-year-old females is 100.
2. It is assumed that of this 100, a total difference of 10 has arisen in that cohort over each year of the decade.
3. Therefore, although the mid-2011 total is not changed, it is assumed that 10 of the difference arose in the year-ending mid-2011, among females who were aged 28 in mid-2011.
4. 10 arose in the year ending mid-2010 among those females aged 27 in mid-2010.
5. 10 arose in the year ending mid-2009 among those females aged 26 in mid-2009 etc.

Where an Other component is not a multiple of 10, it is split as evenly as possible across the decade. For those cohorts aged under 10 in mid-2011 the remaining difference has been allocated evenly to the years in which those children were alive.

Factors contributing to the Other component

The Other component in each LA is likely to be due to a combination of potential inaccuracies in any of the following:

- Internal migration. Apart from the changes to school boarder methods and the small revision to cross-border flows described above, migration between LAs in the UK has not been changed in the back series. However, in practice some moves (for example, those of young people finishing Further Education courses) are difficult to estimate accurately.
- International migration. There are two aspects here:
 - Any of the figures used for the revisions has scope for inaccuracy. This applies both to figures that have been revised and those that are unchanged, and could affect either immigration or emigration.
 - The new methods for distributing immigration down to LA level have only been applied to the years ending mid-2006 onwards. Had it been possible to apply them to the earlier years in the decade this would have led to different figures for each LA.
- The mid-2001 population estimates, which are the starting point for the series of estimates over the decade.
- The 2011 Census estimates. Although the 2011 Census estimates are considered to be of high quality, the need to estimate the number of people who did not appear on a Census form means that each LA inevitably has potential for some uncertainty around the estimate. There is also the potential for other unidentified biases to have occurred.
- Prisoner definitions. The mid-year estimates up to mid-2010 define a 'prisoner' as somebody who has already served at least six months in prison by the mid-year point. However, the mid-2011 estimates have moved to a new definition that a prisoner is someone who is on a sentence of six months or more, regardless of when their sentence commenced.

The overall impact of this is that more people will be defined as prisoners, which will tend to increase the population of LAs with prisons, potentially by several hundred, and slightly reduce it in other LAs.

- Any other component of population estimates over the decade.

Comparison with the national Other component

At national level the Other component accounted for 134,500 of the difference between the rolled-forward and Census-based mid-2011 estimates.

The Other component for each LA is independent of the national Other total. This is because the causative factors will impact each LA differently, and there are also factors (such as internal migration) which do not impact on the national total at all. Similarly, within each LA each age/sex class may have Other components of very different sizes, with the Other components for young adult ages (those ages where people migrate most) being likely to be highest.

In the majority of cases the size of the Other component is less than that of the difference between the rolled-forward and Census-based mid-2011 estimates, but in some cases it is larger. Cases where it is larger do not necessarily mean that the identified components of difference are incorrect; rather it may simply mean that there is a remaining larger inaccuracy elsewhere – for example, in internal migration.

Over the country as a whole, the Other totals at LA level sum to the national total. This is because all the factors which only impact at subnational level have offset each other across the country, leaving the national total.

12. Oadby and Wigston adjustment

Quality assurance revealed that applying the methods described above would result in an incorrect age distribution for Oadby and Wigston LA, resulting from complexities in estimating internal migration of students. The result was a tendency for substantial underestimation of the number of teenagers below student age, and an overestimate of people in their early 20s. These issues affected both sexes, but were more notable for males than females.

The issues were resolved by a special adjustment. This led to much-improved male and female age distributions for Oadby and Wigston, and also increased the number of people in their 20s in neighbouring Leicester, which is where most students in Oadby and Wigston move to after their first year of study. There were also very minor (negligible) adjustments in other LAs across the country.

Full details of this issue can be provided on request. However, it should be noted that only the mid-2002 to mid-2010 estimates are affected, and the mid-2011 estimates for Oadby and Wigston, Leicester and all other LAs are unchanged.

13. Case studies

The following case studies consider how successfully the attributable components of difference (all those apart from Other) have explained the gap between the rolled-forward and Census-based mid-2011 estimates in Newham, Luton and Manchester. In each case both the LA-level gap and the gap for individual age/sex groups are considered.

When interpreting the age/sex graphs in each case study, it is important to remember that any difference that has not been explained by the attributable components will instead have been filled across the decade by the Other component, so ensuring that the official mid-2011 total has been reached.

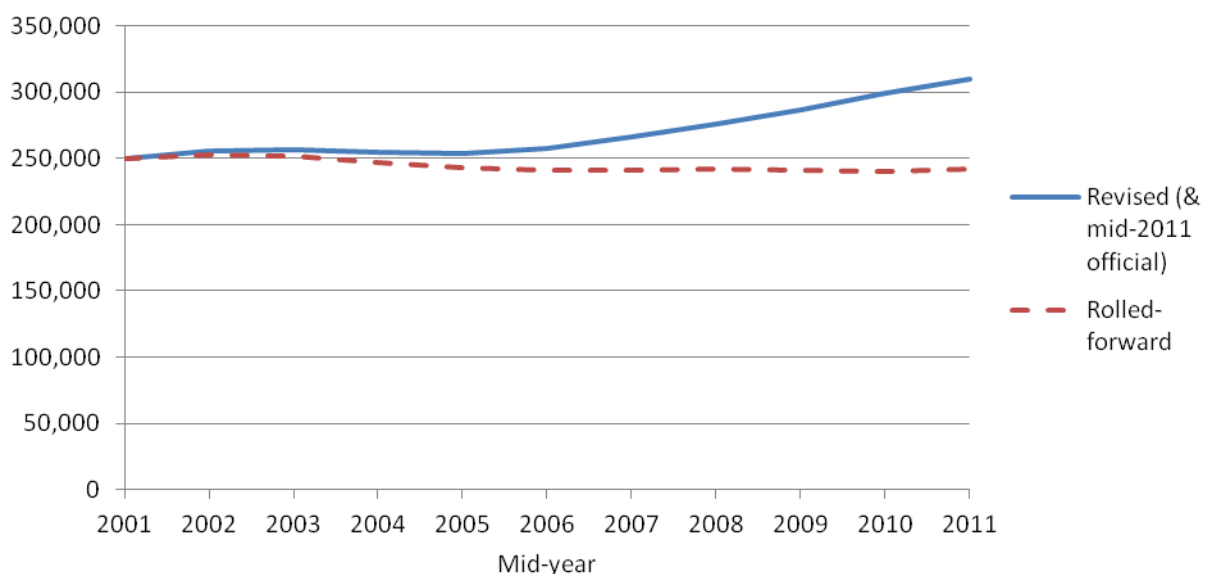
13.1 Newham

Newham is an urban LA in the north-eastern part of Inner London, and was one of the host boroughs for the 2012 Olympics and Paralympics. In mid-2001 its population was 249,400, but by the Census-based mid-2011 estimates it had risen by 61,000 to 310,500. This rise of 24% was the second highest percentage increase in the country, surpassed only by a 27% rise in the adjacent LA of Tower Hamlets.

However, the rolled-forward mid-2011 estimates gave a very different picture. They suggested that Newham's population had declined to 242,400 – a fall of 3%. This difference of 68,100 between the rolled-forward and Census-based estimates was the largest in the country.

Figure 1 shows how the difference has been added to the rolled-forward estimates across the decade in order to create the revised series.

Figure 1: Rolled-forward population estimates for Newham, mid-2001 to mid-2011, compared with the revised mid-2002 to mid-2010 estimates and the official (Census-based) mid-2011 estimates



This shows that most of the difference has occurred in the second half of the decade. The reason for this is demonstrated by the components of difference (Table 5).

Table 5: Components of difference for Newham, mid-2002 to mid-2011 estimates (totals)

Factor	Impact on difference	Remainder
Initial difference	n/a	-68,100
Switch to new method immigration estimates for years ending mid-2006 to mid-2011	41,400	-26,600
Consequent impact on emigration	-2,000	-28,600
EU8 immigration adjustment	6,000	-22,600
Republic of Ireland migration roll-back	500	-22,100
Sum of remaining attributable components	200	-21,900
Other	21,900	0

Note: totals may not sum due to rounding.

Table 5 shows that although the EU8 immigration adjustment makes an important difference, the predominant attributable component of difference for Newham is the introduction of the new immigration methods for the years ending mid-2006 to mid-2011. This is the main reason why the revision is concentrated in the second half of the decade.

Newham's Other component of 21,900 – the unexplained part of the difference – is also large, but one contributory factor could be that new method immigration estimates were not available for the years ending mid-2002 to mid-2005. The new methods added extra immigrants to Newham for all years in which they were applied, so if they could also have been applied to the earlier years then the Other component could potentially have seen substantial reduction. However, it is also possible that any combination of the other possible 'Other' factors (described in Section 11) could have had a large effect.

Another way of considering the impact of the attributable components of difference is to look at Newham's population by age and sex. (Figures 2 and 3)

Figure 2: Age profile of males in Newham, mid-2011

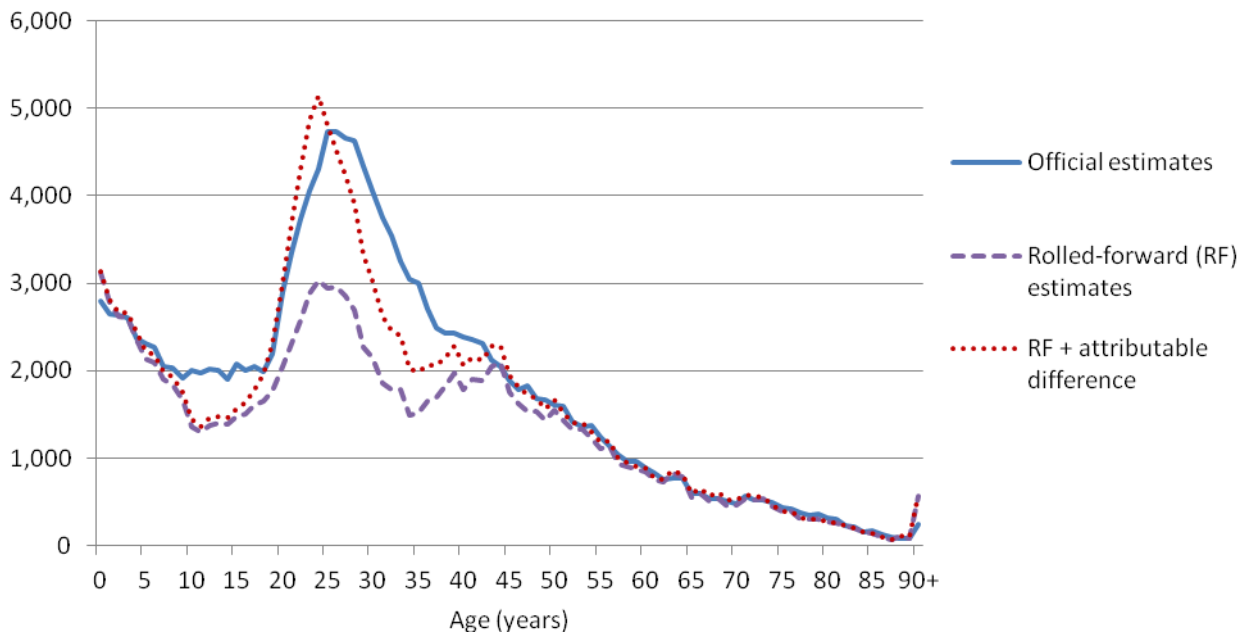
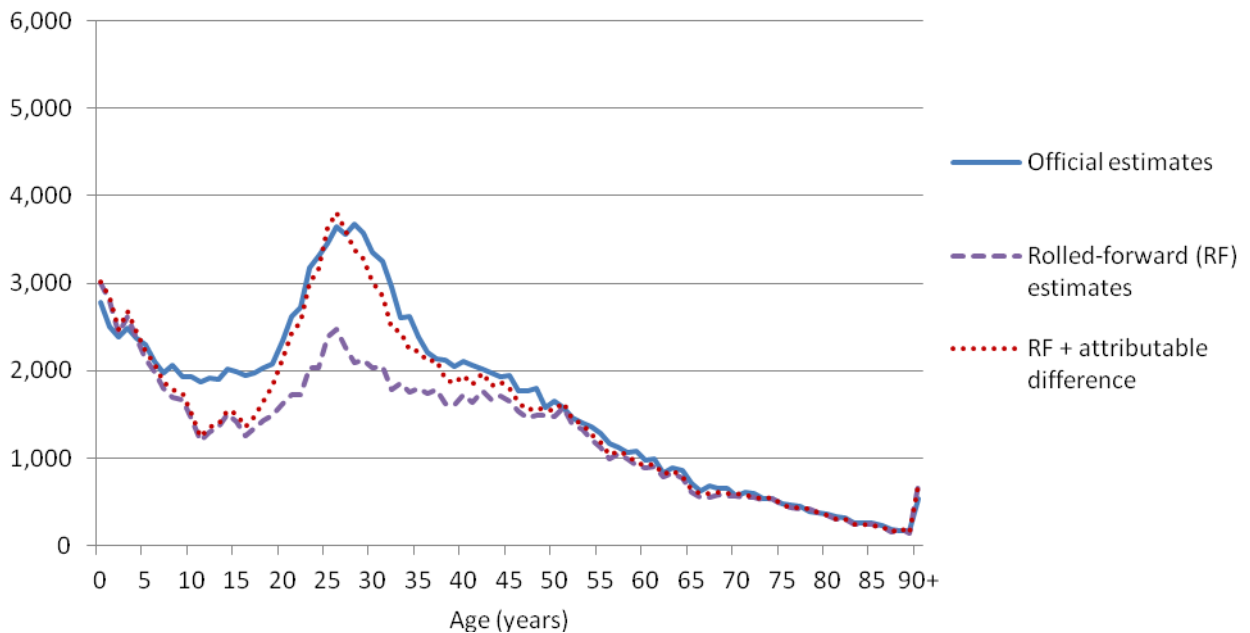


Figure 3: Age profile of females in Newham, mid-2011



In both figures the official (Census-based) mid-2011 estimates are higher than the rolled-forward estimates for almost all ages, and the addition of the attributable components of change closes the gap.

For both sexes the large underestimate of people in their 20s has disappeared, and especially for men in their mid-20s there is now a slight overestimate (meaning a negative Other component is needed to bring the numbers back to the official totals).

For people in their 30s the underestimate has been reduced, especially for females. However, for both sexes there has not been much reduction in the underestimate of people in their teens, meaning the Other component for those age groups is still large.

The methods paper for the national revisions referred to 2011 Census data that suggested that there may be inaccuracy in the methods for estimating the age distribution of international immigrants; this applies to both the former estimates as well as the revised estimates used in the mid-2002 to mid-2010 revisions.

Specifically, the Census data suggested that too many people might be being allocated to the young adult age categories, and too few to the child and slightly older adult age groups. If this is indeed the case it could be an important contributor to the Other component in Newham. Another factor is that the 2001 Census, informing the mid-2001 base for the rolled-forward series, may have underestimated the number of children then aged under 10.

Newham is also an area with a higher than average concentration of students. Such areas are liable to have greater error in internal migration estimates due to the fact that young people, especially males, are liable to take much longer to register with a new GP when they change LA. This lag time, plus the ageing of the affected cohorts through the decade, may have an impact on cohort sizes into the 30s age groups.

The new methods for distributing immigration to LA level are to become the standard for future mid-year estimates, starting with the mid-2012 estimates. ONS is also intending to introduce improved methods for estimating the age and sex distribution of immigrants, and for estimating moves of students after they finish their studies. Therefore it is expected that

immigration estimates for Newham will be much more accurate over the next decade, substantially improving the overall population estimates.

13.2 Luton

Luton is an urban LA comprising the industrial town of Luton in the East of England region. In mid-2001 its population was 185,900, but by the Census-based mid-2011 estimates it had risen by 17,800 to 203,600.

In the rolled-forward mid-2011 estimates the population was 204,000, which was very similar. The components of difference offset each other as follows, meaning that the Other component was just -100.

Table 6: Components of difference for Luton, mid-2002 to mid-2011 estimates (totals)

Factor	Impact on difference	Remainder
Initial difference	n/a	400
Switch to new method immigration estimates for years ending mid-2006 to mid-2011	-3,800	-3,400
Consequent impact on emigration	300	-3,100
EU8 immigration adjustment	2,500	-700
Republic of Ireland migration roll-back	500	-100
Sum of remaining attributable components	300	100
Other	-100	0

Note: totals may not sum due to rounding.

At an LA level the attributable components appear to have explained the difference. However, this does not exclude the possibility that there are other inaccuracies in specific components of the estimates, just that they also happen to have offset each other.

Figures 4 and 5 show the impact of the components of difference by age and sex:

Figure 4: Age profile of males in Luton, mid-2011

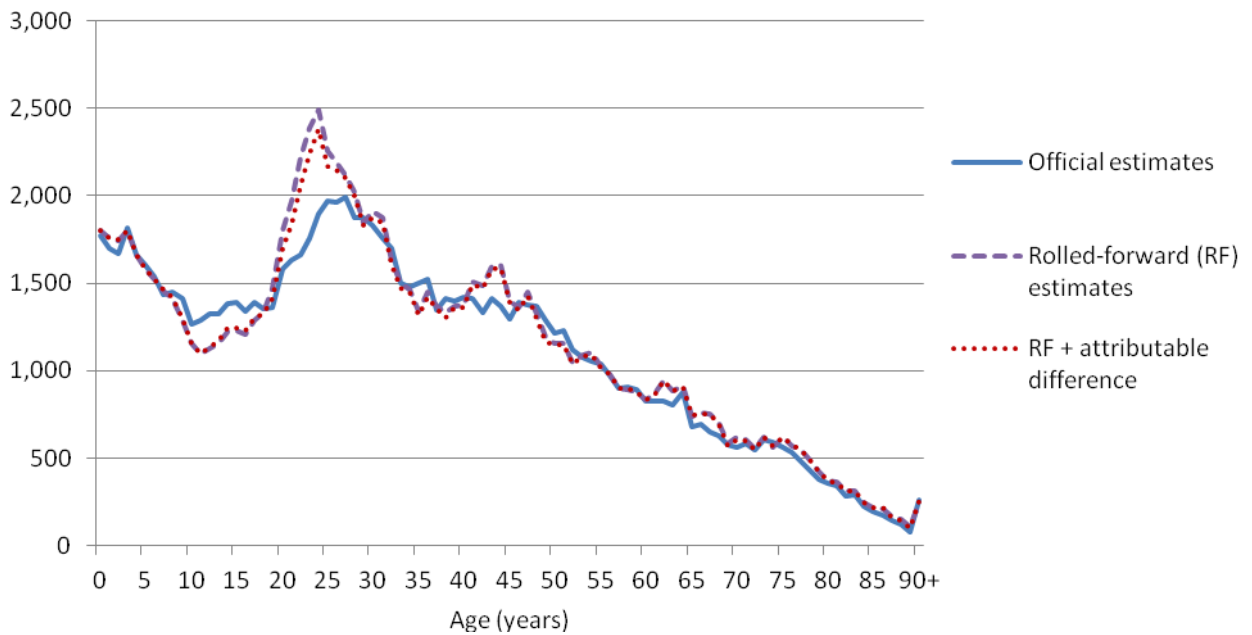
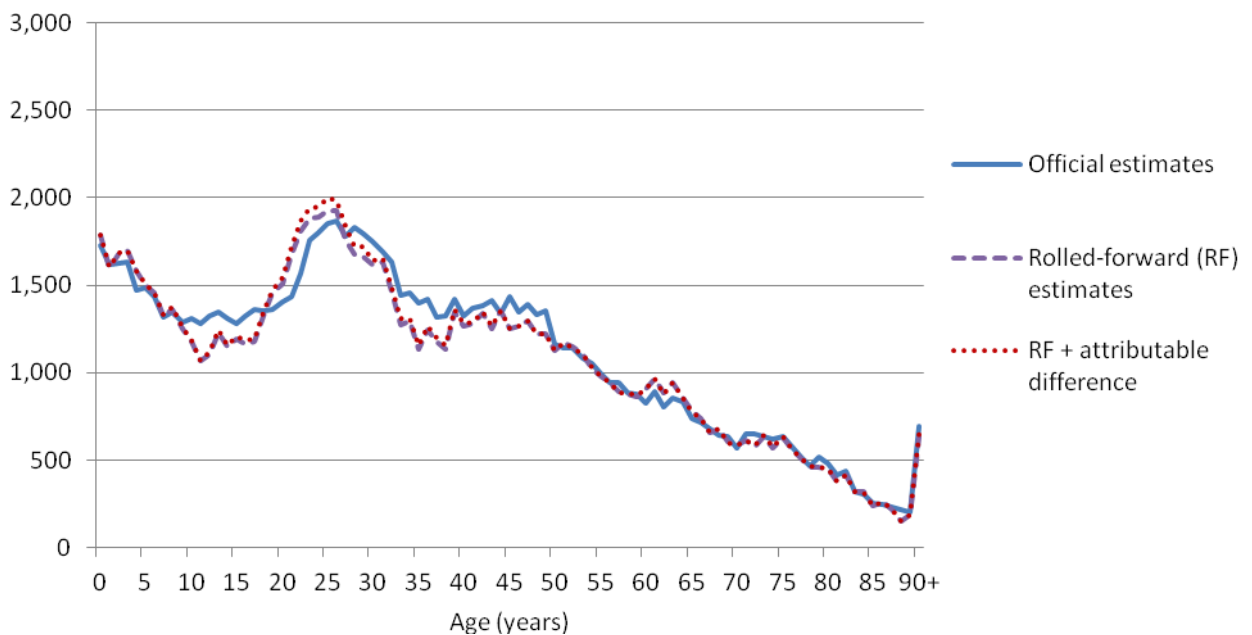


Figure 5: Age profile of females in Luton, mid-2011



In both figures it can be seen that the attributable difference has made very little change to individual age/sex groups. As with Newham there is still an underestimate of the number of people in their teens. There is also a slight underestimate of females in their 30s. However, for both sexes there is an overestimate of the number of people in their 20s, especially their early 20s.

Possible explanations of this are the factors which may have had an impact in Newham: an incorrect age distribution for immigrants, a possible underestimate of young children in the 2001 Census, and any errors in internal migration, although it should be noted that Luton's student population is closer to the national average than that of Newham (which has a comparatively large student population), so any 'student effects' should be smaller.

13.3 Manchester

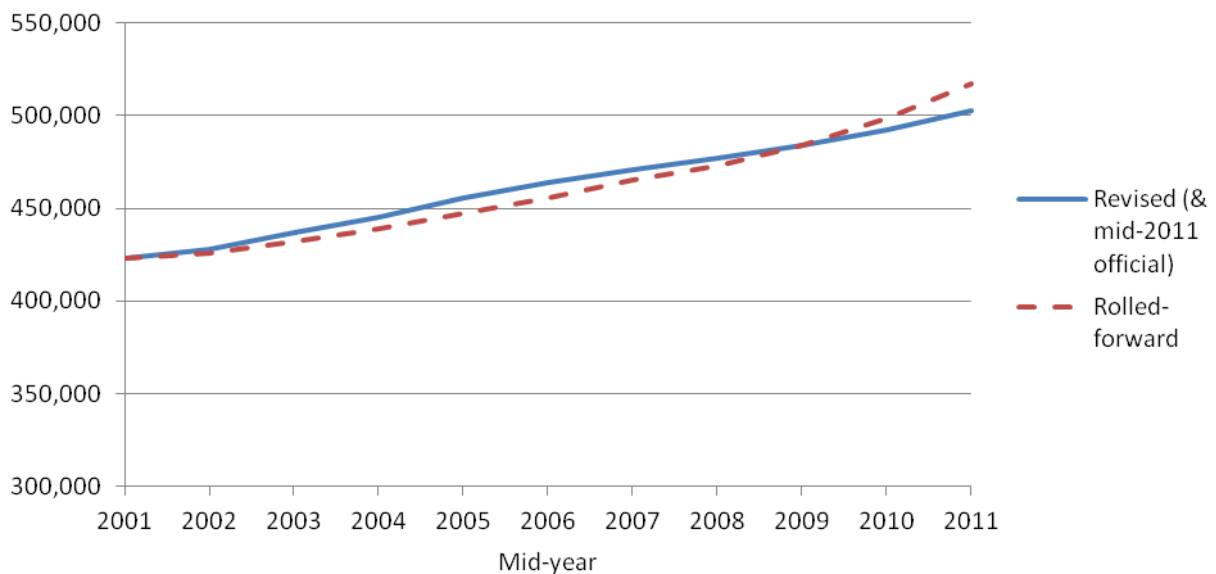
Manchester is an urban LA in the heart of the Greater Manchester conurbation in the North West region of England. It is a major regional centre with a large student population.

In mid-2001 its population was 422,900, but by the Census-based mid-2011 estimates it had risen by 80,000 to 502,900. This rise of 19% was the highest percentage increase in any LA outside of London.

However, the rolled-forward mid-2011 estimates suggested that Manchester's population was 517,000, an additional 14,100.

Figure 6 shows how the difference has been added to the rolled-forward estimates across the decade in order to create the revised series.

Figure 6: Rolled-forward population estimates for Manchester, mid-2001 to mid-2011, compared with the revised mid-2002 to mid-2010 estimates and the official (Census-based) mid-2011 estimates



Note: the y-axis has been started at 300,000 to emphasise the subtle difference between the lines.

This shows that there is little overall difference between the revised and rolled-forward series. During the early part of the decade the revisions slightly increase Manchester's population, but in the latter part of the decade the difference narrows, and by mid-2010 the revised estimates are clearly lower. This pattern can be explained by inspection of the components of difference (Table 7).

Table 7: Components of difference for Manchester, mid-2002 to mid-2011 estimates (totals)

Factor	Impact on difference	Remainder
Initial difference	n/a	14,100
Switch to new method immigration estimates for years ending mid-2006 to mid-2011	-40,000	-25,900
Consequent impact on emigration	1,900	-24,000
EU8 immigration adjustment	4,400	-19,600
Republic of Ireland migration roll-back	1,400	-18,200
Sum of remaining attributable components	-400	-18,600
Other	18,600	0

Note: totals may not sum due to rounding.

For the first part of the decade the main component of difference is Other, which increases the number of people in compared with the rolled-forward estimates. However, for the second half of the decade the switch to the new method immigration estimates becomes the dominant change, and this causes the revised estimates to grow more slowly than the rolled-forward estimates.

Overall the impact of the attributable components of difference is to turn an overestimate of 14,100 into an underestimate of 18,600. However, it should be noted that although the Other component of 18,600 is large in absolute terms (8th largest magnitude in any LA), Manchester is a very large LA meaning that it is much less notable as a percentage of the Census-based population (56th largest magnitude).

There are a number of factors which may be contributing to the Other component. It could be that the new methods have reduced immigration too far. However, it is also possible that the mid-2001 starting point of the rolled-forward series was too low. A third factor is that in an LA with a large number of students there has been more scope for inaccuracy in the internal migration estimates.

Figures 7 and 8 show the impact of the components of difference by age and sex. For both males and females, the attributable components of difference substantially reduce the overestimate for people in their 20s. However, as with Newham and Luton there is still a large underestimate for the teenage years, requiring a large Other component. Again, this may be due to a combination of a general underestimate of immigration of people in those cohorts, and a potential underestimate of under 10s in the 2001 Census, which would have been carried forward through the decade.

For women aged in their 30s and 40s the rolled-forward estimates are lower than the Census-based estimates, and the attributable components of difference make this issue slightly larger. This issue also occurs to a lesser extent for men in that age group. One possible factor could again be an incorrect age distribution of immigrants.

Figure 7: Age profile of males in Manchester, mid-2011

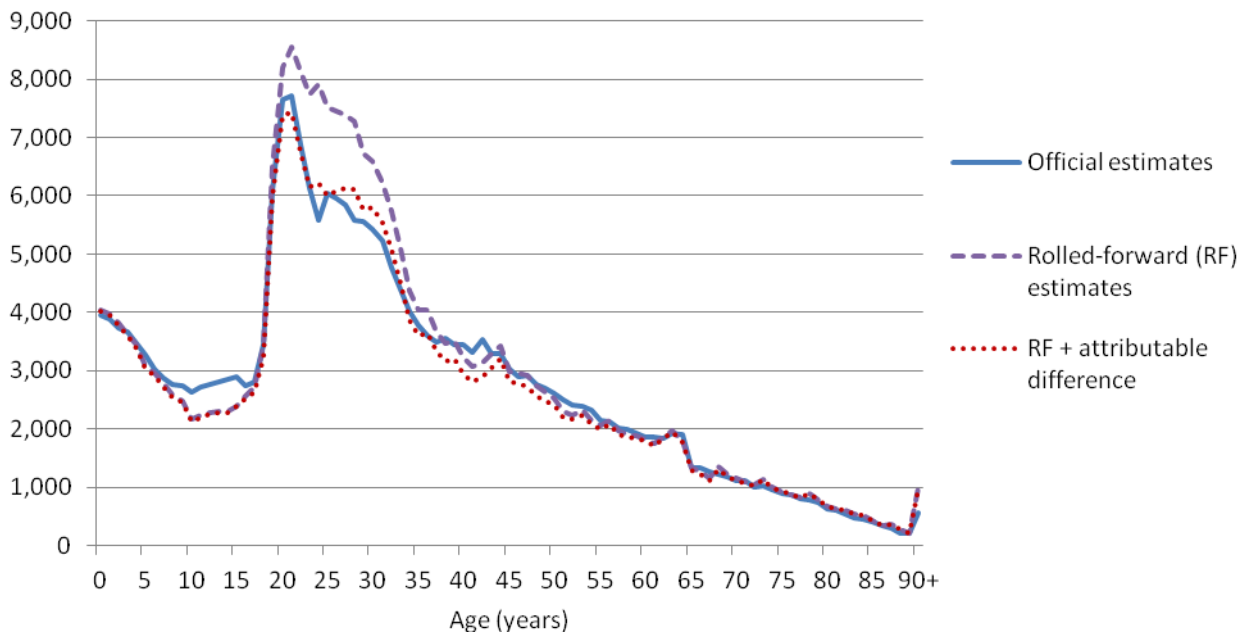
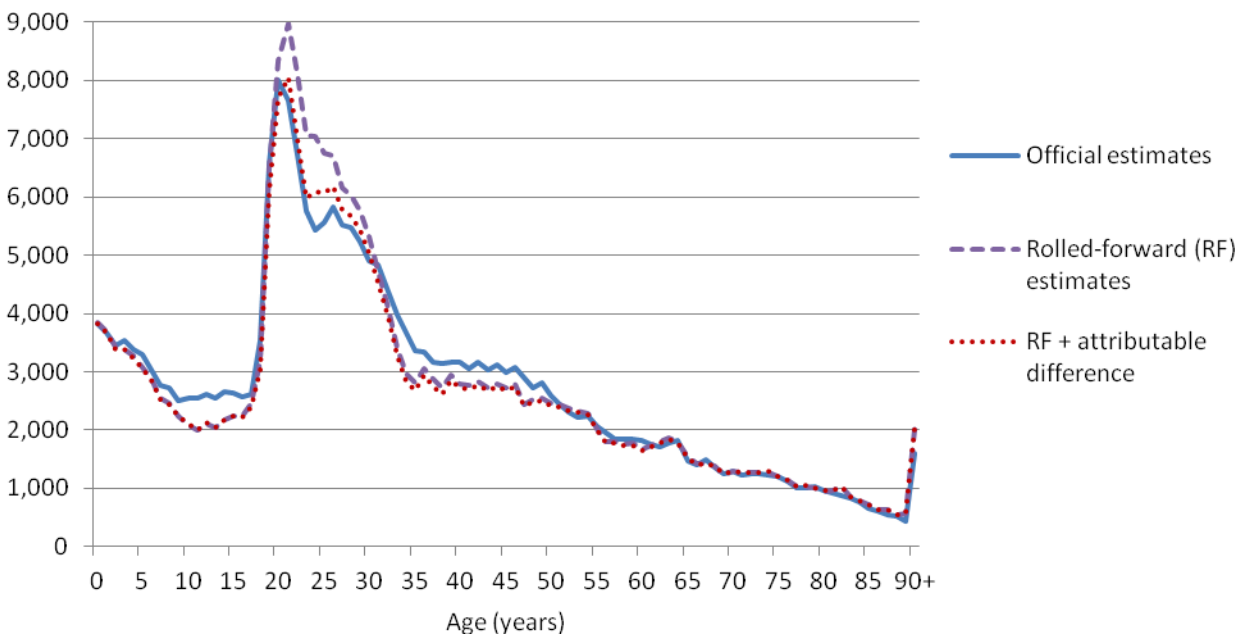


Figure 8: Age profile of females in Manchester, mid-2011



14. Conclusion and future work

The research informing the revised national and subnational estimates for mid-2002 to mid-2010 has sought to identify the cause of the difference between the mid-2011 population estimates rolled forward through the decade from 2001, and the official mid-2011 estimates based on the results of the 2011 Census.

At national level the main driver of the difference is believed to be underestimation of net international migration over the decade, with underestimation of the number of immigrants from the EU8 countries of central and eastern Europe being particularly important.

This underestimation of national net international migration has also had an important impact at LA level. However, for some LAs (including all three case studies) a more important issue has been the way in which international immigration has been broken down to LA level, with the application of new methods based on administrative sources making a substantial difference.

Taking all attributable components of difference into account, some LAs are left with a small Other (unattributable) component whereas others have a large Other component, sometimes larger than the original difference. This may be because of inaccuracy in the attributable components, most of which involve estimation and assumptions. However, it is also likely that other, unattributed factors have made a substantial contribution to the difference.

This publication of revised mid-2002 to mid-2010 subnational estimates offer a much improved and continuous series between the mid-2001 and official mid-2011 estimates, and ONS does not intend to make any further revisions.

However, work is continuing to develop the methods further:

- As indicated, the new method for estimating international immigration to LAs will be the standard.
- The mid-2012 estimates, due in June/July 2013, are also likely to feature a new method for estimating the age and sex distribution of immigrants, as well as refinements to the methods used to estimate moves of students after they finish their studies.

Other research is set to inform improvements in future years, ensuring that ONS's population estimates continue to be of the highest possible quality.

References and related publications

Data:

ONS (September 2012): *Population Estimates for England and Wales, Mid-2011 (2011 Census-based)*, <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-england-and-wales/mid-2011--2011-census-based/index.html>.

ONS (September 2012): *Actual and percentage differences between rolled-forward mid-2011 population estimates and 2011 Census-based MYEs*, <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/difference-between-rolled-forward-mid-2011-estimates-and-2011-census-myes.xls>.

ONS (October 2012): *Local authority 2011 Mid Year Rolled Forward Estimates based on old and new method by single year of age and sex*, <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/rolled-forward-mid-2011-population-estimates--old-and-new-methods-.xls>.

ONS (December 2012): *Population Estimates for England and Wales – Mid-2002 to Mid-2010 Revised (National)*, <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-england-and-wales/mid-2002-to-mid-2010-revised--national/index.html>.

ONS (April 2013): *Population Estimates for England and Wales – Mid-2002 to Mid-2010 Revised (Subnational)*, <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-england-and-wales/mid-2002-to-mid-2010-revised--subnational/index.html>.

ONS (April 2013): *Components of difference underlying the revised mid-2002 to mid-2010 population estimates*, <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/components-of-difference-for-revised-mid-2002-to-mid-2010-population-estimates.xls>.

Papers:

ONS (2007): *Population Statistics: A Revisions Policy*, <http://www.ons.gov.uk/ons/guide-method/revisions/revisions-policies-by-theme/population/population-statistics-revision-policy.pdf>.

ONS (September 2012): *Examining the difference between the rolled-forward mid-2011 population estimates and the 2011 Census-based MYEs at local authority level*, <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/examining-the-difference-between-the-rolled-forward-mid-2011-population-estimates-and-2011-census-based-myes.pdf>. Note that the comparisons in the paper are based on rolled-forward estimates which already take into account the new method for allocating immigration to local authorities.

ONS (December 2012): *Methods used to revise the national population estimates for mid-2002 to mid-2010*, <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/methods-used-to-revise-the-national-population-estimates-for-mid-2002-to-mid-2010.pdf>.

Appendix 3

Email correspondence with ONS

Simon Macklen

From: Alistair Dent <alistair.dent@ons.gsi.gov.uk>
Sent: 01 July 2013 11:14
To: Simon Macklen
Cc: SAPE; projections@ons.gsi.gov.uk
Subject: Re: Fw: unrevised CoC

Hi Simon.

I can certainly answer the first question. As we cannot be certain whether or not the "other unattributable" relates to migration it would seem sensible to exclude it from migration trends.

It'd be best to contact the Population Projections Unit (projections@ons.gsi.gov.uk) regarding the 2012-based SNPPs.

Regards,
Ali

Research Officer, Population Estimates Unit, Population Statistics Division, ONS

From: Simon.Macklen@bartonwillmore.co.uk
To: Alistair Dent/TITCHFIELD/ONS@ONS
Cc: Tony Hitching/TITCHFIELD/ONS@ONS, SAPE@ONS
Date: 01/07/2013 10:54
Subject: RE: Fw: unrevised CoC

Dear Alistair

Further to your email last week I have two queries which I hope you may be able to assist with.

1) in determining past migration trends at a local authority level, should we be taking the 'other unattributable' amounts within the revised MYE components of change into account - or should these be excluded given that they are unattributable.

2) Has the ONS decided how the 'other unattributable' amount will be accounted for in the 2012-based SNPP to be published next year.

Apologies if these queries do not fall within your remit, and if possible I would be grateful if you could forward to the appropriate department.

Many thanks

Regards

Simon Macklen

Director

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Fax: 01322 374661

Web: www.bartonwillmore.co.uk

Please consider the environment before printing this e-mail

From: Alistair Dent [<mailto:alistair.dent@ons.gsi.gov.uk>]
Sent: 28 June 2013 09:11
To: Simon Macklen
Cc: Sue Reeves; Matthew Burton; Nicola Rogers
Subject: Re: Fw: unrevised CoC

Dear Simon,
thanks for your question about the population estimates.
The unrevised components of change and estimates which Tony sent you a link to **DO NOT** include the revisions to migration resulting from the IMPS programme.

However the **revised** back-series of population estimates for 2002-2010 that were published on April 30th 2013 **DO** include the revisions to international migration resulting from the Migration Statistics Improvement Programme. They also include some additional revisions to international migration, including an adjustment for under-estimation of EU8 immigration in the middle of the decade.

Should you need them, the revised estimates can be found here: <http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-england-and-wales/mid-2002-to-mid-2010-revised--subnational-/index.html>
There are also revised components of change for 2002-10 available here: <http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hoc-data/population/may-2013/mid-2002-to-2010-revised-components-of-change-for-england-and-wales.zip>

Section 6 of the methods doc here explains the changes to migration made to the revised estimates & components: <http://www.ons.gov.uk/ons/guide-method/method-quality/specific/population-and-migration/population-statistics-research-unit--psru-/methods-used-to-revise-the-subnational-population-estimates-for-mid-2002-to-mid-2010.pdf>

Regards,
Ali

Research Officer, Population Estimates Unit, Population Statistics Division, ONS

From: SAPE
To: Alistair Dent/TITCHFIELD/ONS@ONS
Cc: Matthew Burton/TITCHFIELD/ONS@ONS
Date: 27/06/2013 08:24
Subject: Fw: unrevised CoC
Sent by: Sue Reeves

Hi both

I don't believe that the indicative population estimates 2006-2010 were included in the MYE CoC are they?

Sue

----- Forwarded by Sue Reeves/TITCHFIELD/ONS on 27/06/2013 08:18 -----

From: Simon.Macklen@bartonwillmore.co.uk
To: SAPE@ONS
Date: 26/06/2013 14:45
Subject: RE: unrevised CoC

Tony

Many thanks for this.

Are you able to confirm whether any of the MYE and particularly the 2009-10 figures incorporate the 'Indicative population estimate 2006-2010' published in Dec 2011 and detailing the revisions to migration resulting from the Migration Statistics Improvement Programme - I am keen not to double count the revisions if some of the MYE data already incorporates them.

Many thanks

Regards

Simon Macklen

Director

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Dartford, DA10 0DF

Phone: 01322 374678

Fax: 01322 374661

Web: www.bartonwillmore.co.uk

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From: Tony Hitching [<mailto:tony.hitching@ons.gsi.gov.uk>] **On Behalf Of** SAPe@ons.gsi.gov.uk

Sent: 26 June 2013 11:40

To: Simon Macklen

Subject: unrevised CoC

Hi Simon,

The attached link will take to the unrevised components of change datasets for 2002-2010.

<http://www.ons.gov.uk/ons/about-ons/what-we-do/publication-scheme/published-ad-hoc-data/population/october-2012/mid-2002-to-mid-2010-detailed-components-of-change.zip>

Regards

Tony

For the latest data on the economy and society consult National Statistics at <http://www.ons.gov.uk>

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Appendix 4

Popgroup detailed summary NMG 793

Appendix 5

Popgroup detailed summary NMG 1168

Appendix 6
Affordability ratio map

Affordability Ratio - Index vs. England (6.7) Median House Price to Median Earnings

Legend

Index

- Less than 75 (Most Affordable)
- 75 - 90
- 90 - 110
- 110-125
- Greater than 125 (Least Affordable)

