

**Town & Country Planning
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**new estimates of housing
demand and need in
england, 2011 to 2031**

By Alan Holmans



tcpa



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Cover illustration by Clifford Harper. www.agraphia.com

key headlines

- 1 There was an abrupt break with longer-term trends in household formation in England between 2001 and 2011. Net additional household formation was down by some 20%, with almost 1 million fewer one-person households in 2011 than had been projected.
- 2 There were also other large-scale shifts in the mix of household types, with far more couple-plus-other-adult households and multi-adult households than expected. In part this is about younger people staying at home or sharing accommodation for longer. But that is not the whole story as changes are observed in all age groups.
- 3 Drawing on the evidence from the 2011 Census, DCLG has published only interim household projections to 2021, and the proportions of household types are based on only two points (2001 and 2011). The projections therefore include the effects of the financial crisis and the subsequent recession, but these factors are not the whole reason why household formation was so far below trend.
- 4 This study has both extended the official projections to 2031 (required for land use planning and other planning purposes) and has also looked at the impact of a partial return to longer-term trends. This paper provides estimates of the number of households, housing requirements, and the split between market and social/affordable housing at national and regional levels.
- 5 Table H1 summarises the results of the different projections and includes the 2008-based projections (in the '2011' column) as a reflection of earlier expectations. The 2011-based estimates show considerably lower rates of household formation – but there is still, at the least, almost a 20% increase in the number of households over the 20-year period from 2011 to 2031.
- 6 These projections, which include higher population estimates than in the past but lower household formation rates, together with adjustments for second homes and vacancies in the stock, suggest that some 240,000-245,000 additional homes will be required each year to meet newly arising demand and need.
- 7 Applying past trends based mainly on household composition would suggest that some 68% of the additional homes would be in the market sector (owner-occupation or private renting without benefits), but that nearly one-third of newly arising need would require below-market prices and rents.
- 8 As has been clear from the evidence of the last few years, some of these requirements will be suppressed if affordability worsens or the economy remains in recession. However, these are not outcomes for which it would be prudent to plan.
- 9 At the regional level, not far short of a quarter of all the required new housing is likely to be concentrated in London, with over 60% in the four southern regions. But all regions require significant additional housing investment.
- 10 These projections are based on past trends in sector shares and an eventual return to long-term trends in output. They can only form a starting point for understanding future investment requirements. But lower levels of output will put increasing strains on the housing market, worsening affordability and restricting access to adequate housing. And if, as we all hope, the economy moves back towards longer-term patterns of growth, even more housing investment will be required to meet resultant demands.

Table H1
Household estimates for 2011, 2021 and 2031

	2011	2021	2031
	thousands		
'Modified trend projection'	22,102	24,332	26,593
2011-based official projection	22,102	24,307	–
'Extended official projection'	–	–	26,326
Long-term trend (2008-based official projection)	22,389	24,843	27,124

executive summary

Past trends (1961-2001) in household formation broke down between 2001 and 2011

The 2011 Census showed that the change in the total of households in England since 2001, and changes in the mix of types of households, were substantially different from previous estimates and projections. Prior to the new household projections published by the Department for Communities and Local Government (DCLG) in April 2013,ⁱ which took on board the 2011 Census results, the most recent set of projections were 2008-based.ⁱⁱ Apart from adjustments to take on board evidence from the Labour Force Survey about declining household formation rates at the younger ages, the 2008-based projections depended on long-term trends in household formation since 1971. Table S1 shows the Census totals for 1991 and 2001; and for 2011 the 2008-based projection and the 2011 Census total. The changes between 1991 and 2001 were very similar to 1971-81 and 1981-91, and were carried forward to 2011 in the 2008-based projection (and in previous post-2001 projections). However, the 2011 Census figures were very different.

The difference of 287,000 between the projected and the Census total of households in 2011 shown in Table S1 is less than the like-with-like difference due to the Census population total being higher than the 2008-based projection. A hypothetical household total for 2011 derived using the 2008-based population

and the 2011 Census household representative rates would be 375,000 lower than the 2008-based projection. That makes a difference of 1.7% to the total of households, which may not appear large. But it is 20% of the projected net increase in households.

There were substantial differences between the projected and Census figures for numbers of households of individual types. The extreme instance is one-person households, where there is a difference of nearly 1 million. About one-fifth (200,000) was probably due to more adult sons and daughters living with their parents. However, this was far from being the sole cause, because differences between the trend projection and the Census numbers of one-person households occurred in other age ranges as well.

Future numbers of households

The household projections published in April 2013 reach only to 2021, as does the 2011-based population projection by the Office for National Statistics (ONS) from which they are derived. Important uses for household projections (such as land use planning and other planning uses) require a 20-year period. This study therefore extends the population projection and the household projection to 2031. The method used by ONS to project the population to 2021 allows the population of household-forming age to be extended to 2031.

Table S1
Household estimates and projections for England in 1991, 2001 and 2011

	1991 (Census)	2001 (Census)	2011 (projected)	2011 (Census)
	thousands			
Couples, no other adults	8,852	9,151	9,579	9,465
Couples, one or more other adults	2,779	2,290	1,925	2,508
(All couples)	(11,631)	(11,441)	(11,504)	(11,973)
Lone-parent households	982	1,438	1,811	1,712
Other multi-person households	1,499	1,341	1,301	1,632
One-person households	5,052	6,304	7,773	6,785
All households	19,164	20,523	22,389	22,102

Minor apparent discrepancies in totals are due to independent rounding

ⁱ *Household Interim Projections, 2011 to 2021, England*. Department for Communities and Local Government, Apr. 2013. www.gov.uk/government/publications/household-interim-projections-2011-to-2021-in-england

ⁱⁱ *Household Projections, 2008 to 2033, England*. Housing Statistical Release. Department for Communities and Local Government, Nov. 2010. www.communities.gov.uk/documents/statistics/pdf/1780763.pdf

The central question for the household projection is whether what happened in 2001-11 was a structural break from a 40-year trend; or whether household formation was forced downwards by economic and housing market pressures that are likely to ease with time. At the time of the 2011 Census, the British economy was still in recession and the housing market was depressed. The working assumption in this study is that a considerable part but not all of the 375,000 shortfall of households relative to trend was due to the state of the economy and the housing market. 200,000 is attributed to over-projection of households due to the much larger proportion of recent immigrants in the population, whose household formation rates are lower than for the population as a whole. This effect will not be reversed. The other 175,000 is attributed to the economy and the state of the housing market and is assumed to gradually reverse. The projection derived in this study taking these factors into account is termed the

'modified trend projection', and is shown in Table S2 along with an extension of DCLG's projection (the 'extended official projection') and (to represent the long-term trend) DCLG's 2008-based projection.

Future housing requirements

The number of dwellings required to match the projected numbers of households given in Table S2 includes an increase in second homes and the additional vacant dwellings required for a constant vacancy margin. For the 20-year period 2011-31 these are put at 240,000 and 135,000, respectively. They are included in the figures given in Table S3. The figures are divided between the market and social sectors and are given for each region. The division between sectors is derived from the way in which housing tenure varies with type of household and age.

There are many uncertainties about the figures, but clearly the prospect is for large numbers of new dwellings to be needed, in both sectors, and in all regions. The high figure for London (23% of the national total) is the result of the population projection for London for 2011-21, carried forward (as for all regions) for a further ten years to 2031. The household projection derived from it – a net increase of over 1 million in the two decades – is purely demographic and takes no account of possible physical shortages of space.

The estimate of future demand and need is a normative calculation based on future numbers of households. If many fewer dwellings are built, shortages of accommodation and worsening affordability could force household formation downwards. But the consequence would be increasingly severe housing stress and strain.

Table S2
Household estimates for 2011, 2021 and 2031

	2011	2021	2031
	thousands		
'Modified trend projection'	22,102	24,332	26,593
2011-based official projection	22,102	24,307	–
'Extended official projection'	–	–	26,326
Long-term trend (2008-based official projection)	22,389	24,843	27,124

Table S3
Projected newly arising demand and need for housing in England and its regions, 2011-13 - annual averages

	Market sector	Social sector	Total
	thousands		
North East	5.3	3.8	9.0
North West	11.5	8.1	19.6
Yorkshire and Humber	13.6	7.1	20.7
East Midlands	16.4	4.1	20.5
West Midlands	13.8	7.0	20.8
East of England	21.8	8.8	30.6
London	31.4	25.1	56.4
South East	33.1	8.7	41.7
South West	18.2	6.0	24.2
England	164.8	78.5	243.3

Minor apparent discrepancies in totals are due to independent rounding

1

Introduction

The 2011 Census showed that the number of households in England had risen much less since 2001 than projections based on the 2001 Census had suggested; and that the increases in the numbers of households of particular types were even more different. To take the most extreme example, the number of one-person households in 2011 according to the Census was nearly 1 million lower than in the 2008-based projection. The 2011-based household projection published in 2013 by the Department for Communities and Local Government (DCLG)¹ was therefore very different from the 2008-based projection (essentially based on the 2001 Census) that it had published in 2010.²

A review of demographically based estimates of future demand and need for housing would therefore appear to be called for. The review presented in this study can only be of a preliminary nature, because the 2011-based projection had to rely to a considerable extent on estimates rather than firm Census figures; and also because much of the Census data required for studying possible reasons for the changes shown by the 2011 Census have not yet been published.

Section 2 of this study presents the contrast between the picture of changes in the number of households in total and of particular types between 2001 and 2011 drawn by the 2008-based household projections (and previous post-2001 Census projections) and that drawn by the 2011 Census. These differences set the context for projections of future numbers of households post-2011.

Section 3 deals with projected numbers and types of households after 2011. DCLG's published 2011-based projections reach only to 2021. For full comparison with previous projections, and for several policy uses (such as land use planning and other local government planning uses), projections for 2031 are needed. For a household projection from 2021 to 2031, a population projection that is compatible with the 2011-21 projections used by DCLG is required. The working detail is presented in Annex A, and a more summary account is given in Section 3.

From the projected population in 2031, a projection of households has to be derived. In 2011 the British economy had only partly recovered from the 'Great Recession' of 2008-09. It could therefore be contended that household formation in 2011 was below trend and that, as the economy recovered,

household formation would move back towards the long-term trend. It is argued in this study that not all of the shortfall of household formation in 2001-11 relative to long-term (i.e. pre-2001) trends can be attributed to the recession in the economy and the housing market slump. Worsening affordability of housing caused reductions in household formation before the onset of the financial crisis and the recession.

Part of the reduction from trend was due to the trend-based projection not taking account of the effect of much higher inward migration of people whose household formation rates are probably lower than those of the population as a whole. This reduction in the 2011-based projection would not be reversed when the economy recovered. In the main projection presented in this study, termed the 'modified trend projection', the remaining part of the 2011 shortfall is assumed to be the result of the recession and the housing market slump and is gradually reversed. An alternative projection – termed the 'extended official projection' – takes the changes between the 2011 and 2021 household representative rates by age group in the DCLG projection and runs them on for a further ten years. This projection comes out just over a quarter of a million lower than the 'modified trend projection'.

In Section 4, data from the English Housing Survey in 2008-09 to 2010-11 on households' housing tenure are used to divide projected households between 'market' and 'social' sectors. The social sector comprises renting at below-market rents and private sector tenants with Housing Benefit. The market sector is owner-occupiers and tenants not receiving Housing Benefit. In substance, the method used is the same as in previous estimates of future demand and need for housing, using data on tenure specific for the type of household and age of the household representative, although with minor differences. Projected totals of household divided between the market and social sectors are the central core of the estimates of newly arising demand and need. Other elements are the replacement of social sector re-lets lost as a consequence of earlier 'Right to Buy' sales, changes in the number of vacant dwellings, and increases in the number of secondary residences.

This is a two-sector estimate of future demand and need for housing. In estimates for Shelter in 2005 and 2008, a three-sector version was also produced, with intermediate housing as the third sector. That is not attempted here, because basic assumptions for those estimates are no longer valid. The need for intermediate housing arose from

1 *Household Interim Projections, 2011 to 2021, England*. Department for Communities and Local Government, Apr. 2013. www.gov.uk/government/publications/household-interim-projections-2011-to-2021-in-england

2 *Household Projections, 2008 to 2033, England*. Housing Statistical Release. Department for Communities and Local Government, Nov. 2010. www.communities.gov.uk/documents/statistics/pdf/1780763.pdf

Table 1
Household estimates and projections for England in 1991, 2001 and 2011

	1991	2001	2011
	thousands		
2008-based			
Couple households, no other adults	8,852	9,151	9,579
Couple households, one or more other adults	2,779	2,290	1,925
(All couples)	(11,631)	(11,441)	(11,504)
Lone-parent households	982	1,438	1,811
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One-person households	5,052	6,304	7,773
Total	19,164	20,523	22,389
2011-based			
Couple households, no other adults	8,852	9,151	9,465
Couple households, one or more other adults	2,779	2,290	2,508
(All couples)	(11,631)	(11,441)	(11,973)
Lone-parent households	982	1,438	1,712
Other multi-person households	1,499	1,341	1,632
One-person households	5,052	6,304	6,785
Total	19,164	20,523	22,102

Source: *Household Interim Projections 2011 to 2021, England*. DCLG, Apr. 2013. DCLG Website Live Table 417
 Minor apparent discrepancies in totals are due to independent rounding

increases in house prices relative to income, making house purchase unaffordable for many people who would previously have been able to afford it. Owner-occupation was seen as the preferred tenure; for the most part people who rented from private landlords were thought to do so because they could not afford to buy. Inability to afford a large deposit has become a common obstacle to house purchase for people with adequate incomes. The rapid growth of renting is beginning to call into question the assumption that most people who rent do so because they cannot afford to buy. No information is available with which to estimate numbers of would-be home-buyers who cannot raise sufficiently large deposits even though they have adequate income.

A regional analysis of housing demand and need is presented in Section 5.

2 Past trends break down - projected and actual changes in the numbers of households between 2001 and 2011

The way in which the actual change in numbers and types of households diverged from past trends, between 2001 and 2011, may be shown by comparing the actual change between the 2001 and 2011 Censuses with the figures for 2011 in the 2008-based projections. Those projections depended on 1971-1981-1991-2001 trends, modified only to take account of falls after 2001 in household representative rates at ages up to 35. Throughout that period, household totals rose by more between successive Censuses than could be explained by increases in the size of the population and changes in its structure. The same was true of 1961-1971.³ The abruptness of the contrast between 1991-2001, which represents past long-term trends, and 2001-11 is brought out by Table 1.

³ See A. Holmans: *Household Projections in England: Their History and their Uses*. Cambridge Centre for Housing and Planning Research, University of Cambridge, Mar. 2012. www.cchpr.landecon.cam.ac.uk/Downloads/Household%20Projections%20History%20WEBCOPY.pdf

The difference between the Census-based and the projected totals of households in 2011, 287,000, understates the true difference, because the population in 2011, according to the Census, was higher than the population projection from which the 2008-based household projection was derived. A hypothetical total of households in 2011 with the 2008-based population projection and 2011 household representative rates would be 22,014,000⁴ – 375,000 lower than the 2008-based projection. This is a difference of 1.7%, which may not appear large. But it is 20% of the projected net increase in households between 2001 and 2011, which is what would matter for a demographically based estimate of demand and need for housing. Including the 2011 Census data point in the projection of households in total (the first stage of the projection process in use since

2010) therefore pulls down the projected total in future years.

The 2008-based projection of types of household was based on Census data for 1991 and 2001. It therefore assumed that changes in types of household between 2001 and 2011 would follow the same pattern as in 1991-2001. The 2011 Census showed that actual changes were very different. There were increases in the number of couple households with other adults present (including sons and daughters aged 15 years and over, unless in full-time education, when they count if 19 and over) instead of the projected decline, and similarly with other 'multi-person households', which increased by nearly 300,000 instead of falling by 40,000.

Most striking of all is the difference between the projection, effectively the change between 1991 and 2001, and the actual change shown by the Census

Table 2
One-person households and couple households with other adults in selected age groups in 2011

Household representative's age	Projection	Census	Difference
		thousands	
One-person households			
15-24	270	222	-48
25-34	998	794	-204
Couple households with other adults			
45-54	729	924	+195
55-64	530	736	+206
65-74	199	282	+83

Source: Household Interim Projections, 2011 to 2021, England and Household Projections, 2008 to 2033, England. DCLG

Table 3
Difference between projected and actual numbers of households in 2011

Household representative's age	One-person households	Couple households	Other multi-person households
	thousands		
16-24	-48	+15	+16
25-34	-204	-13	+35
35-44	-187	+94	+27
45-54	-180	+182	+56
55-64	-130	+151	+57
65-74	-104	+24	+55
75-84	-88	+19	+64
85 and over	-48	+1	+22
Total	-988	+469	+331

Source: Household Interim Projections, 2011 to 2021, England and Household Projections, 2008 to 2033, England. DCLG
Minor apparent discrepancies in totals are due to independent rounding

⁴ Household Interim Projections in England, 2011 to 2021, England (see note 1), Table 6

in the number of one-person households. The comparatively small increase contrasts not only with the large increase between 1991 and 2001, but with inter-Census increases right back to 1961. What lies behind these aggregate figures remains, for the most part, still to be investigated. But it is possible to show that there is substance in the perception that considerable numbers of young men and women have lived longer in their parents' home instead of leaving to live independently. This would show in the 2011 Census figures as fewer young one-person households than in the projection, and more couples with one or more other adults a generation older. This is shown in Table 2.

Not all couples with other adults are couples with co-resident adult sons and daughters, of course. Table 2 suggests that 200,000-250,000 of the shortfall (relative to trend) of one-person households is the result of more adults sons and daughters living with their parents. However, the shortfall of one-person households was to be found in 2011 in all age ranges up to 85 and over. Table 3 shows the shortfalls, relative to trend, of one-person households in each age range to 2011, and the excesses of couple households and 'other multi-person households'.

There is little to be gained by surmising about the causes of the differences from the 2008-based projection (effectively what took place in 1991-2000): did a smaller proportion of older men and women who were widowed live on as one-person households, and if so why? Was there between 2001 and 2011 a structural break with past trends that will persist? Or is a temporary aberration being shown? In principle, these are important questions for estimating future numbers of households and hence demand and need for housing, but they cannot be answered until more information is available, including the 2011 data for the ONS Longitudinal Study.

3 2011-based projections of households in 2021 and 2031

In contrast to all previous official household projections right back to 1969, the 2011-based projection by DCLG published in 2013 reaches only ten years ahead. A projection for 20 years is required for a number of uses. An attempt is therefore made here to extend DCLG's projection to 2031. The starting point is the population projections. DCLG's household projection is based on the Interim 2011-based population projection produced by the Office for National Statistics (ONS).⁵ This population

projection reaches only to 2021. It is derived from the 2010 projection, updated to take on board the 2011 Census results. The Census provided a new, and higher, 2011 base population; but the age-specific birth rates and death rates were carried forward from the 2010-based projections, as were international migration rates. The increases in the population of household-forming age between 2021 and 2031 in the 2010-based projections are therefore compatible with the 2011-based projections used by DCLG. They can therefore be added to the 2021 projection used by DCLG to provide population estimates for 2031 that are compatible with those for 2011 and 2021 in ONS's 2011-based projection. Fuller details, including estimates for 2031 in ten-year age ranges, are given in Annex A.

Two household projections to 2031 are put forward here. One extends the official projection forward from 2021 to 2031. The other derives from the pre-2001 long-term trend, represented by the 2008-based projection, with a partial return to this trend. Of the 375,000 difference between, on the one hand, a hypothetical 2011 households total derived using the 2008-based population projection and 2011 household representative rates and, on the other, the 2008-based projection (as discussed in Section 2 above), part is considered to be permanent and part caused by economic and housing market pressures which may ease over time. The method used to extend the official projection was to calculate ratios of household representatives to household population in 2011 and 2021 in each age group and assume that the changes between 2021 and 2031 will be the same as between 2011 and 2021. This is not, of course what would have been done if DCLG had made a projection for 2031; it is only a substitute, an approximation based on available public information.

The other household projection, which may be termed the 'modified trend projection', is based on the judgement that the 1961-1971-1981-1991-2001 trend has not completely collapsed, and will in time reappear, although in modified form. For present purposes it is taken to be represented by DCLG's 2008-based household projection. That projection was modified in the short term to take account of falling household representative rates at the young ages in 2001-09. But in the medium and long term it was close to previous post-2001 projections.

The actual 2011 total of households is the starting point, 375,000 below the trend level (the 2008-based projection for 2011). 200,000 of this is the estimated effect of the 2008-based projection being overstated through not taking account of immigration in 2001-11 being much higher than before 2001, the period of the data from which were calculated the

⁵ *Interim 2011-based Subnational Population Projections for England*. Statistical Bulletin. Office for National Statistics, Sept. 2012. www.ons.gov.uk/ons/rel/snpp/sub-national-population-projections/Interim-2011-based/stb-2011-based-snpp.html

Census household representative rates to derive the trend projection. Immigrants from outside the UK have lower household formation rates, age for age, than the population as a whole⁶ in the first decade after they arrive. An increase in the number of immigrants, and hence an increase in their proportion of the population, will reduce overall household formation rates compared with what would have happened if immigration levels had remained unchanged. The details of the higher immigration levels in the 2000s as compared with the 1990s and 1980s, and of 200,000 as the amount by which the number of households in 2011 exceeded the number that there would have been if pre-2001 levels of immigration had continued, are given in Annex A.

An estimate of 200,000 as the effect of overestimating the increase in households due to immigration leaves 175,000 which might be attributed to household formation being depressed by unaffordable house prices, the 'Great Recession', and then the housing market slump. This figure

does not represent the full effect of housing market and economic conditions on household formation. Reductions in household formation rates at young ages after 2001 are in the 2008-based projection.⁷ The figure is a residual, and so accumulates any errors or omissions in other figures. Furthermore, nothing is allowed for other possible reasons for household formation in 2001-11 being below trend.

For the present, 175,000 of the shortfall of households in 2011 relative to the long-term trend is taken to be due to housing market causes and the state of the economy. The assumption is made that with time the housing market and the economy will recover, but not very quickly. Assumptions are all that is possible. They have to be expressed numerically for purposes of calculation, which can convey an unfounded impression of precision. Different time-paths could, of course, be assumed. The average shortfall of 175,000 a year in 2001-11 is assumed to continue to 2015. From 2016 onwards the shortfall is taken to reduce by 2,000 a year up to and including 2022. Beyond 2022 it is assumed, on

Table 4
Household estimates for 2011, 2021 and 2031

	2011	2021	2031
	thousands		
'Modified trend projection'	22,102	24,332	26,59
2011-based official projection	22,102	24,307	–
'Extended official projection'	–	–	26,326
Long-term trend (2008-based official projection)	22,389	24,843	27,124

Table 5
Types of household in 2011, 2021 and 2031

	2011	2021		2031	
		Official projection	'Modified trend projection'	'Extended official projection'	'Modified trend projection'
	thousands				
Couple households	11,973	12,846	12,859	13,674	13,674
Lone-parent households	1,712	2,114	2,116	2,251	2,251
Other multi-person households	1,632	1,956	1,958	2,150	2,150
One person households	6,785	7,392	7,400	8,251	8,518
All households	22,102	24,307	24,332	26,326	26,593

The difference of 25,000 in 2021 between the official projection and the 'modified trend projection' is apportioned pro-rata. Minor apparent discrepancies in totals are due to independent rounding.

⁶ See A. Holmans with C. Whitehead: *More Households to be Housed – Where is the Increase in Households Coming From?* Town & Country Planning Tomorrow Series Paper 5. TCPA, Oct. 206. Published in *Town & Country Planning*, 2006, Vol. 75, Oct.

⁷ See *Updating Department for Communities and Local Government's Household Projections to a 2011 Base: Methodology Report*. Department for Communities and Local Government, Apr. 2013, pp.10-11.
www.gov.uk/government/publications/updated-dclgs-household-projections-to-a-2011-base-methodology

the grounds of caution, to run at 2,000 a year below the 2008-based projection, rather than completely return to it. No catching up of shortfalls due to the state of the economy and the housing market is assumed. Table 4 shows the 'modified trend projection' of households, along with the official projection for 2021, and the 'extended official projection' for 2031. Also shown is the 2008-based official projection, to represent the long-term trend.

By chance, the 'modified trend projections' figure for 2021 differs only slightly from DCLG's 2011-based projection (by 0.1%). For this reason, the official projection of types of household by age in 2021 can be used for the 'modified trend projection' as well as for the official projections. For 2031, the types of household in the 'extended official projection' were estimated from the proportionate division between types of household within each age range in 2021, applied to the 2031 numbers of households in each age range. Table 4 shows that the 'modified trend projection' for 2031 is 267,000 higher than the 'extended official projection'. All of these households are assumed to be one-person households, because the largest shortfall of actual households in 2011 relative to the long-term trend was of one-person households (see Table 1 above). Table 5 shows the totals of households of each type in 2011, and projections for 2021 and 2031.

4 Division of households between market and social sectors and newly arising demand and need for housing in England, 2011-31

The starting point for dividing the projected total of households in 2031 between social and market sectors is the household totals in Table 5, cross-divided by age. The market sector is defined as owner-occupiers plus tenants in the private rented sector not receiving Housing Benefit. The social sector comprises tenants of local authorities and housing associations; tenants in the private rented sector that receive Housing Benefit; and households that first became owner-occupiers by purchase as sitting tenants from local authorities or other public bodies (counted as part of the social sector because they did not buy their homes in the open market). Private sector tenants include rent-free occupiers; and households that rent their accommodation from their employers, or with business premises. Employees of public sector organisations are included, as well as renters from private employers. Financial arrangements to make house purchase easier, such as Help to Buy, are also included.

The division between the market and social sectors in age/household type categories was estimated using data from the English Housing Survey for 2008-09, 2009-10 and 2011-12. The composition of the market and social sectors, cross-analysed by type of household, is shown in Table 6.

Couple households had the highest proportion in the market sector, 84%, and lone-parent households the lowest, 32%; 88% of couples in the market sector were owner-occupiers, and only 12% private sector tenants. Of the 'other multi-person households' in the market sector, 39% were private sector tenants. The growth of private sector renting relative to owner-occupation does not affect the division between the market and social sectors, and so does not need to be forecast here.

The proportions of households in each category defined by type of household and age of the household representative that were in the market sector in the base period (2005-09 to 2010-11) are shown in Table 7. It is not necessary to show the proportion in the social sector as well as it is by definition 100% minus the market sector proportion.

In Table 7 the proportions of lone-parent households aged 65 and over in the market sector are not meaningful because the numbers are too small. Lone-parent households include, by definition, those with one or more dependent children. By the time most lone parents reach their 60s, their children have ceased to be dependent in the technical sense.

Comparatively small numbers of households move between the market and social sectors at ages above the mid-40s. The proportion of household representatives aged 45-54 in the market sector in 2011, for example, will be within a little of the proportion at ages 55-64 in 2021, and at ages 65-74 in 2031. Table 7 shows that the proportion of couple households in the market sector was highest in the 45-54 age group, and then declined, up to the 75-84 age group. There was not as smooth a sequence of market sector proportions with age for one-person households: the proportion in the 65-74 age group looks anomalously low in relation to the proportions in other age ranges. Similarly, the proportion of 'other multi-person households' aged 55-64 in the market sector looks anomalously high. For projecting tenure proportions these irregularities may be smoothed. There are too few lone-parent households aged 45 and over for this procedure to work. For couples, 'other multi-person households' and one-person households, the base period market sector proportions used for estimating proportions in 2031 are shown in Table 8, together with the 'rolled forward' proportions in 2031.

The market sector proportions in Table 8 are applied to the 2031 projected household totals by type in Table 5, cross-divided by age. The figures for 2031 are for the 'modified trend projection'. At ages

16-24, 25-34 and 35-44 the proportions in Table 8 are taken as they stand for all four types of household; so too for lone-parent households aged 45-54 and over. Table 9 shows the estimates made of the division of households of each type between

the market and social sectors in 2011, 2021 and 2031.

The effect of 'rolling forward' the base period market sector proportions to 2021 and 2031 was calculated from comparison with hypothetical totals

Table 6
Composition of market and social sectors in 2008-09 to 2010-11

	Couple households	Lone-parent households	Other multi-person households	One-person households	Total
thousands					
Market sector					
Owner-occupier – not RTB	9,050	393	719	3,369	13,531
Private sector tenant – not HB	1,269	108	468	736	2,580
Total	10,319	500	1,187	4,105	16,111
Social sector					
Social sector tenant	1,231	719	329	1,574	3,854
Private sector tenant – HB	185	305	57	243	789
Owner-occupier – not RTB	548	28	106	252	934
Total	1,964	1,052	492	2,070	5,577
All households	12,282	1,553	1,678	6,175	21,689
Memorandum items:					
<i>All owner-occupiers</i>	<i>9,598</i>	<i>421</i>	<i>825</i>	<i>3,622</i>	<i>14,465</i>
<i>All private sector tenants</i>	<i>1,454</i>	<i>413</i>	<i>524</i>	<i>979</i>	<i>3,370</i>

Source: Cambridge Centre for Housing Planning Research, drawing on the English Housing Survey

RTB: Right to Buy – households who first became owner-occupiers through purchase as sitting tenants from the social sector

HB: Receiving Housing Benefit

Minor apparent discrepancies in totals are due to independent rounding

Table 7
Proportion of households in 2008-09 to 2010-11 in the market sector by type of household and age

	Couple households	Lone-parent households	Other multi-person households	One-person households
%				
16-24	73.1	7.2	92.5	62.9
25-34	84.5	19.5	92.1	79.2
35-44	84.9	40.2	59.2	71.4
45-54	85.5	53.4	62.2	65.8
55-64	84.6	43.8	66.0	64.4
65-74	83.1	64	60.6	61.3
75-84	80.3	100	59.7	64.8
85 and over	80.6	0	59.8	63.5
Total	84.0	32.2	70.7	66.5

Source: Cambridge Centre for Housing Planning Research, drawing on the English Housing Survey

for 2021 and 2031 with base period market sector proportions. The effects of 'rolling forward' are shown in Table 10. No 'rolling forward' effect could be calculated for lone-parent households. They are included in the market sector figures in Table 9.

A calculation may be made to apportion the projected increase in households in the market and social sectors between 2011 and 2031 into:

- (a) the effect of the overall increase in households – i.e. what the increase in households in each

Table 8
Base year and 2031 'rolled forward' market sector proportions

Age	Couple households		Other multi-person households		One-person households	
	Base year	2031	Base year	2031	Base year	2031
	%					
45-54	85.5	85.5	62.0	62.0	66.0	66.0
55-64	84.5	85.5	61.0	62.0	64.5	66.0
65-74	83.0	85.5	60.5	62.0	64.0	66.0
75-84	80.5	84.5	59.5	61.0	64.0	64.5
85 and over	80.5	83.0	59.5	60.5	63.5	64.0

Source: Table 7, and see text

Table 9
Estimated division between market and social sector households in 2011, 2021 and 2031

	Couple households	Lone-parent households	Other multi-person households	One-person households	Total	Percentage of total
	thousands					%
2011 Market sector	10,102	605	1,158	4,576	16,443	74.4
Social sector	1,870	1,107	474	2,208	5,659	25.6
Total	11,973	1,712	1,632	6,785	22,102	100.0
2021 Market sector	10,887	762	1,399	5,009	18,057	74.2
Social sector	1,972	1,354	599	2,391	6,276	25.8
Total	12,859	2,116	1,958	7,400	24,332	100.0
2031 Market sector	11,638	8,125	1,525	5,754	19,742	74.2
Social sector	2,036	1,426	625	2,764	6,851	25.8
Total	13,674	2,251	2,150	8,518	26,593	100.0

Source: Table 5, and see text

Minor apparent discrepancies in totals are due to independent rounding

Table 10
Effect of 'rolling forward' market sector proportions

	2021	2031
	thousands	
Couple households	78	131
Other multi-person households	7	15
One-person households	26	99
Total	111	245

Source: Table 8, and see text

Table 11
Components of change in the number of households in the market and social sectors between 2011 and 2031

	Market sector	Social sector	Total
	thousands		
Overall increase in households	+3,299	+1,192	+4,491
'Roll forward'	+245	-245	0
Change in mix of household type and ages	-258	+258	0
Total	+3,286	+1,205	+4,491

Source: Tables 9 and 10

Table 12
Proportions of types of household in 2011 and 2031

	2011	2031	Change
	%		
Couple households	54.2	51.4	-2.8
Lone-parent households	7.7	8.5	+0.8
Other multi-person households	7.4	8.1	+0.7
One-person households	30.7	32.0	+1.3
All households	100.0	100.0	0

Source: Calculated from Table 5

Table 13
Newly arising demand and need for housing in England, 2011-31

	Market sector	Social sector	Total
	thousands		
Net increase in households	3,299	1,192	+4,491
Second homes*	+240	0	+240
Vacant dwellings*	+115	+20	+135
Offset for lost re-lets	-358	+358	0
Total	3,296	1,570	4,866
Annual average	165	78	243

* Notional figures from *Homes for the Future*. Cambridge Centre for Housing Planning Research, for Shelter, 2008

sector would be if the proportions in 2031 were exactly the same as in 2011;

- (b) the effect of 'rolling forward' base period proportions (see Table 8); and
- (c) the effect of changes in the mix of household types and ages – notably the reduction in the proportion of couple households, the type of household where the market sector is highest.

Table 11 shows this analysis. The changes in the mix of types of household between 2011 and 2031 are shown in Table 12.

Table 7 showed that 84% of couple households were in the market sector in the base period; for lone-parent households, 'other multi-person households', and one-person households the proportions were 32%, 71% and 66%, respectively. That the change between 2011 and 2031 in the mix of household types should depress the overall proportion of households in the market sector is thus readily explained.

The national picture – newly arising demand and need for housing in England, 2011-31

The primary component of the estimate of future demand and need for housing is the projected net increase in households divided between the market and social sectors (derived from Table 9). Other components are: offsets for the loss of re-lets in the social sector due to past 'Right to Buy' sales (see Annex C); increases in the number of secondary residences; and increases in vacant dwellings. These last are notional figures; the increase in the number of vacant dwellings is to keep the vacancy rate constant as the stock increases. These components are brought together in Table 13. The estimate of demand and need for housing is in net terms, i.e. not including replacements of losses from the dwelling stock.

An average of 240,000-245,000 additional dwellings annually is the estimate of the number required to meet newly arising demand and need. By 'newly arising' is meant generated by events during the projection period, with neither an increase nor a reduction of the backlog of un-met need. The calculation of newly arising demand and need is a normative calculation, in which demand and need depend on demography and custom and expectations about ability to live independently.

Fewer houses built than 'needed' does not cause need and demand to disappear without housing conditions worsening. The argument has been advanced from time to time that the number of households formed is governed by the number of dwellings there are for them to live in. Historical evidence – inter-Census increases in the dwelling

stock and households – is against this hypothesis, from 1951 to 2001. But between 2001 and 2011 the average annual increase in households is estimated at 158,000 a year, whereas the increase in dwellings averaged 161,006 a year (provisional, as the 2011 Census data on the housing stock are not yet to hand). It may be useful to look again at changes in dwelling stocks and households between 2001 and 2011 when the 2011 data on the dwelling stock, vacant dwellings and second homes are available for study.

The most recent previous estimate of future demand and need in England was published in 2008, in *Homes for the Future*,⁸ produced by the Cambridge Centre for Housing Planning Research for Shelter. Key features of the report are set out in Annex B. It contrasts in several ways with the present 2011-based report. Nevertheless, the average net increase in households is almost identical in the two reports: 225,000 a year in the 2011-based report, and 223,000 in the 2006-based report. This is paradoxical, since in the 2006-based report the number of households was projected to rise in line with long-term trends, whereas in 2011 the projected change in numbers of households is well below trend. The explanation is in the difference in the population projection. Table B3 in Annex B shows that in the 2004-based population projection – the base of the household projection in *Homes for the Future* – the population of household-forming age (15 and over) was projected to rise by 2.4 million between 2011 and 2021. The current 2011-based projection puts the number at 3.3 million. The difference between the two figures is equivalent, in very round terms, to 40,000-45,000 households a year.

5 Regional analysis of housing demand and need, 2011-31

The regional analysis of demand and need for housing in England is essentially an apportionment between regions of the national estimate (given in Section 4), rather than independent regional estimates. There are two parts to the regional estimates of demand and need for housing: household projections, specific for type of household and age of the household representative; and housing tenure – the division between market and social sectors – also specific for household type and age.

Regional household projections

DCLG did not include regions in its 2011-based household projections, the first time this dimension was not included in official household projections for England. Below national level it published projections for each individual local authority area, counties, and unitary authorities. Anyone wanting regional figures had to obtain them by adding the relevant local authority figures. The regional figures for 2011 and 2021 given here were produced by the Cambridge Centre for Housing and Planning Research from DCLG's online local authority data.

For 2031 household projections for regions are required that are compatible with the projections for England in Table 5. The method used was to work forward from the increase in each region between 2011 and 2021. Projections were made separately for couple households, lone-parent households, one-person households, and 'other' households, termed 'other multi-person households', for clarity, as well as for all households in total. For each region the net increase in households in total and in the four types between 2011 and 2021 were taken as a first approximation for the net increases between 2021 and 2031. These increases were then scaled to sum to the net increases for England between 2021 and 2031 shown in Table 5. The 'modified trend projection' for 2031 given in Table 5 is the measure of the national net increase to which the regional projections were scaled. This is a mechanical procedure, which assumes that the direction of change and the broad magnitudes in 2021-31 will be similar to the official projections for 2011-21. Table 14 shows the regional household projections to 2031.

The division of households between the market and social sectors varies with the age of the household representative as well as with the type of household. National market and social sector proportions of households by household type and age in 2008-09 to 2010-11 (the best available approximation to the 2011 base) are given in Tables 6 and 7. For couple households and one-person households the market sector proportion is shown to diminish fairly consistently with age. Something similar is to be seen for one-person households, although the progression is not as smooth. For couples and one-person households the passage of time will result in rising proportions of households in the market sector at higher ages (see the discussion related to Tables 7 and 8 above). It is necessary to see whether the market share profiles with age are similar for the individual regions so that similar calculations can be made at

8 A. Holmans, S. Monk and C. Whitehead: *Homes for the Future – A New Analysis of Housing Need and Demand in England*. Cambridge Centre for Housing Planning Research, for Shelter, Nov. 2008. http://england.shelter.org.uk/professional_resources/policy_and_research/policy_library/policy_folder/homes_for_the_future_-_a_new_analysis_of_housing_need_and_demand_in_england

Table 14**Projections of households by region to 2031 – totals and types of households**

	Couple households	Lone-parent households	Other multi-person households	One-person households	All households
	thousands				
North East					
2011	591	97	77	366	1,130
2021	608	119	88	393	1,207
2031	621	126	93	446	1,286
North West					
2011	1,553	262	216	980	3,011
2021	1,595	312	243	1,035	3,187
2031	1,634	324	255	1,158	3,371
Yorkshire and Humber					
2011	1,222	172	144	688	2,226
2021	1,279	210	168	750	2,407
2031	1,331	223	181	860	2,595
East Midlands					
2011	1,083	136	119	558	1,897
2021	1,155	172	144	617	2,086
2031	1,221	186	159	716	2,282
West Midlands					
2011	1,262	188	158	690	2,298
2021	1,314	232	187	744	2,477
2031	1,359	247	204	849	2,659
East of England					
2011	1,416	161	148	704	2,429
2021	1,545	209	183	777	2,713
2031	1,665	230	205	900	3,000
London					
2011	1,515	322	390	1,052	3,278
2021	1,767	395	493	1,154	3,810
2031	2,008	416	561	1,362	4,347
South East					
2011	2,049	230	236	1,048	3,563
2021	2,218	290	281	1,163	3,951
2031	2,375	312	307	1,350	4,344
South West					
2011	1,283	143	145	700	2,270
2021	1,375	176	171	765	2,488
2031	1,460	187	186	876	2,709
England					
2011	11,973	1,712	1,632	6,785	22,102
2021	12,859	2,116	1,958	7,400	24,332
2031	13,674	2,251	2,150	8,518	26,593

Source: England figures from Table 5; 2011 and 2021 figures produced by the Cambridge Centre for Housing and Planning Research from DCLG's county, unitary and district figures; 2031 figures from author's estimate

Minor apparent discrepancies in totals are due to independent rounding

Table 15**Market sector proportions of types of household by region in 2008-09 to 2010-11**

	Couple households	Lone-parent households	Other multi-person households	One-person households
	%			
North East	75.8	34.0	65.5	53.0
North West	84.7	40.8	70.9	61.8
Yorkshire and Humber	82.5	37.7	75.3	62.0
East Midlands	84.8	47.1	76.7	70.2
West Midlands	82.9	34.3	67.6	63.2
East of England	85.5	45.5	71.3	69.1
London	78.0	25.3	69.4	69.4
South East	88.1	44.9	74.3	75.5
South West	87.4	41.0	78.5	78.5
England	84.0	32.2	70.7	66.5

Source: Cambridge Centre for Housing Planning Research, drawing on the English Housing Survey

regional level. To do this, regional projections of numbers of households by age are required for couples and one-person households. For lone-parent households and 'other multi-person households' a simpler calculation – a division of all households between market and social sectors – will suffice.

Couple households and one-person households in each region analysed by age in 2011 and 2021 were obtained by the Cambridge Centre for Housing and Planning Research by adding the figures for counties and unitary authorities published by DCLG. For 2031 the estimated numbers of couple households and one-person households in each age range in England were first divided between regions in the same proportions as in 2021. The numbers were then scaled to sum to the totals of couple and one-person households in each region in 2031.

Proportions of households in the market and social sectors by region

The starting point is to divide the regional household totals by household type in Table 14 between market and social sectors (see Table 15). The data source is an analysis by the Cambridge Centre for Housing and Planning Research of material from the English Housing Survey for 2008-09 to 2010-11 combined.

The market sector proportions for couple and one-person households analysed by age may next be examined. They are shown in Table 16 for ages 45-54 and over. Ages 16-24, 25-34 and 35-44 are not included as they are not part of a calculation of the effect of ageing by 'rolling forward' the tenure proportions.

Among couple households there appears to be a declining profile with age (although not a smooth one) in all regions other than London and the South West. Among one-person households there are signs of a declining profile in Yorkshire and Humber, East Midlands, East of England, and South East. A calculation may be made for couple households in the regions other than London and the South West on the lines of the calculation for England (see the discussion on deriving the national figures and Tables 8 and 10 above). The regional figures are then used to apportion the national 'roll forward' effect – 131,000 in 2031 – between regions. For one-person households it would seem unlikely that the whole of the 'rolling forward' effect in England – 99,000 in 2031 – occurred in only four regions, given the sampling variation in the data. It is apportioned pro-rata to numbers of one-person households aged 55 and over. Table 17 shows the effect of 'rolling forward' market sector proportions on the number of households in the market sector in 2031.

The market sector proportions in Table 16 were used to calculate the number of couple and one-person households, excluding the 'roll forward' effect, in each region. For lone-parent and 'other multi-person households' the market sector proportions in the base period were used in both 2011 and 2031. Divisions of households in total in 2011 and 2031 between the market and social sectors in each region are given in Table 18.

The net increases in households in the market and social sectors in Table 19 are the central core of the estimate of future demand and need for housing at regional level. The other items (see Table 13 for national demand and need for housing) are: increases

Table 16**Market sector proportions of couple and one-person households in 2011 - regional age analysis**

	Age				
	45-54	55-64	65-74	75-84	85 and over
	%				
Couple households					
North East	80.8	74.8	72.4	67.5	61.0
North West	85.8	84.6	86.1	78.8	88.1
Yorkshire and Humber	87.7	79.5	79.5	75.5	71.6
East Midlands	87.2	87.2	80.6	82.6	62.7
West Midlands	86.5	84.2	81.9	77.4	84.6
East of England	85.8	86.9	84.4	82.3	72.4
London	78.1	75.3	78.7	78.1	76.8
South East	88.5	91.1	87.8	82.4	88.3
South West	88.1	90.7	85.8	85.8	90.6
One-person households					
North East	51.8	50.9	39.7	50.1	51.3
North West	59.9	58.0	58.0	64.1	56.4
Yorkshire and Humber	62.5	59.0	53.6	55.7	56.6
East Midlands	68.5	67.0	65.1	70.9	65.2
West Midlands	60.7	63.6	62.0	62.9	63.4
East of England	68.6	69.0	64.7	64.6	63.8
London	60.0	61.3	53.5	60.3	54.8
South East	79.2	74.8	72.2	72.9	72.8
South West	76.4	68.2	71.0	71.3	74.4

Source: Cambridge Centre for Housing Planning Research, drawing on the English Housing Survey

Table 17**Increase in market sector households in 2031 due to market sector proportions 'rolled forward'**

	Couple households	Other multi-person households	One-person households	Total
	thousands			
North East	19	1	5	25
North West	10	2	13	25
Yorkshire and Humber	33	1	10	44
East Midlands	20	1	9	30
West Midlands	19	1	10	30
East of England	13	2	12	27
London	0	2	11	13
South East	17	3	17	37
South West	0	2	12	14
England	131	15	99	245

Source: See text

Table 18
Households in the market and social sectors by region in 2011 and 2031

	North East	North West	Yorkshire and Humber	East Midlands	West Midlands	East of England	London	South East	South West	England
	thousands (except 'Market sector')									
2011										
Market sector	724	2,194	1,610	1,462	1,661	1,870	2,240	2,882	1,800	16,443
Social sector	406	817	616	435	637	559	1,038	681	470	5,659
Total	1,130	3,011	2,226	1,897	2,298	2,429	3,278	3,563	2,270	22,102
Market sector, %	64.1	72.9	72.3	77.1	72.7	77.0	68.3	81.0	79.3	74.4
2031										
Market sector	841	2,447	1,887	1,798	1,929	2,302	2,850	3,534	2,154	19,742
Social sector	445	924	708	484	730	698	1,497	810	555	6,851
Total	1,286	3,371	2,595	2,282	2,659	3,000	4,347	4,344	2,709	26,593
Market sector, %	65.4	72.6	72.7	78.8	72.5	76.7	65.6	81.4	79.5	74.2

Source: Table 9, and see text

Table 19

Regional estimates of demand and need for housing, 2011-31

	North East	North West	Yorkshire and Humber	East Midlands	West Midlands	East of England	London	South East	South West	England
	thousands									
Market sector										
Net increase in households	117	253	277	336	268	432	610	652	354	3,299
Secondary residences	19	16	30	10	44	21	41	33	26	240
Increase in vacant dwellings	4	13	12	12	9	17	15	17	16	115
Offset to 'lost' re-lets	-35	-52	-48	-30	-45	-35	-39	-41	-33	-358
Total	105	230	271	328	276	435	627	661	363	3,296
Social sector										
Net increase in households	39	107	92	49	93	139	459	129	85	1,192
Increase in vacant dwellings	1	3	2	2	2	2	3	3	2	20
Offset to 'lost' re-lets	+35	+52	+48	+30	+45	+35	+39	+41	+33	+358
Total	75	162	142	81	140	176	501	173	120	1,570
Market and social sectors										
Net increase in households	156	360	369	385	361	571	1,069	781	439	4,491
Secondary residences	19	16	30	10	44	21	41	33	26	240
Increase in vacant dwellings	5	16	14	14	11	19	18	20	18	135
Offset to 'lost' re-lets	0	0	0	0	0	0	0	0	0	0
Total	180	392	413	409	416	611	1,128	834	483	4,866

Source: Table 18, and see text

Table 20**Projected newly arising demand and need for housing, regions of England, 2011-31 - annual averages**

	Market sector	Social sector	Total	Market sector share
	%			
North East	5.3	3.8	9.0	59
North West	11.5	8.1	19.6	59
Yorkshire and Humber	13.6	7.1	20.7	66
East Midlands	16.4	4.1	20.5	80
West Midlands	13.8	7.0	20.8	66
East of England	21.8	8.8	30.6	71
London	31.4	25.1	56.4	56
South East	33.1	8.7	41.7	79
South West	18.2	6.0	24.2	75
England	164.8	78.5	243.3	68

Source: Table 19

Minor apparent discrepancies in totals are due to independent rounding

in vacant dwellings; increases in secondary residences; and the offset for re-lets lost as a consequence of earlier 'Right to Buy' sales. Notional regional figures (from the work for Shelter in 2008 – *Housing Need in England: Technical Report on Sources and Methods*) are used at this stage for increases in vacant dwellings and in secondary residences. For the offset to lost re-lets the national figure in Table C2 in Annex C – 358,000 – is apportioned between regions pro-rata to the number of 'Right to Buy' owner-occupied dwellings in each region (see Table 6 for the source). Table 19 shows estimated newly arising demand and need for housing in each region for the whole of 2011-31. Annual averages are given in Table 20.

The very high figure for London (nearly a quarter of the national total) is the result of the population projections, specifically by working forward to 2031 by adding, as a first approximation, the 2011-21 increase in each region to DCLG's 2021 total. DCLG projected an increase of 530,000 households in London between 2011 and 2021 (see Table 14); hence a projected increase of over 1 million between 2011 and 2031. It might be questioned whether there would be room for a further 530,000 households in London between 2011 and 2021, let alone between 2021 and 2031. Capacity constraints have never been introduced into official household projections. Here, the projection figures for London are taken as they stand. But the distinction between a projection and a forecast would be important here.

6

Conclusions

Trends in the past decade

Analysis of the 2011 Census results shows an abrupt break with longer-term trends in household formation in England between 2001 and 2011. At the same time as population increased by more than projected, net additional household formation was down by some 20%.

This decline was reflected in large-scale shifts in the mix of household types. In particular, there were far more couple-plus-other-adult households and multi-adult households than expected and almost 1 million fewer one-person households in 2011 than had been projected. In part this can be explained by younger people staying at home or sharing accommodation for longer. But that is not the whole story as changes are observed in all age groups.

This reduction in the overall number of households and the changing household mix are clearly not just outcomes of the financial crisis, which has reduced incomes and confidence without significantly improving housing affordability. Some of the changes, especially among younger households, can be traced back at least to the turn of the century.

A particularly important reason for the difference can probably be attributed to the evidence that migrants initially form fewer households than those who have lived in the UK all their lives – something which is not taken into account in official projections.

The reasons for estimating future household numbers

By definition, projections can only provide a baseline of what would happen if past trends are carried forward, given changes in population and the make-up of that population. They do, however, provide an absolutely necessary input into planning decisions on services, local government finance and land requirements for future housing investment. An assessment through to 2031 is required for these planning purposes. However, the official interim projections reach only to 2021.

The research reported here has therefore extended the official projections to 2031. It has also looked at the impact of a partial return to longer-term trends, as the economic evidence suggests that we are slowly recovering from the effects of the financial crisis. It provides estimates of the number of households, housing requirements and the split between market and social/affordable housing at national and regional levels up to 2031.

The findings

The analysis presented in this paper suggests that, even if the economy remains depressed and household formation rates remain low, there will still be almost a 20% increase in the number of households over the 20-year period to 2031. This is mainly because of the expected continued growth in population.

The 'extended official projection' suggests that there will be around 26,325,000 households in 2031 but that this would rise to some 26,600,000 if there

is some movement back to past trends as the economy improves. This is somewhat higher than the 2008-based projection because the decline in household formation rates is offset by a growing population.

These projections, together with adjustments for gains, losses and vacancies in the stock, suggest that over 240,000 additional homes will be required each year to meet newly arising demand and need.

Applying past trends based mainly on household composition would suggest that some 68% of new households would be in the market sector (owner-occupation or private renting without benefits), but that housing to meet nearly one-third of newly arising need would require some subsidy. However, as has been clear from the evidence of the last few years, some of these requirements will be suppressed if affordability worsens or the economy remains in recession.

At the regional level not far short of a quarter of all requirements are likely to be concentrated in London, with over 60% in the four southern regions. But all regions require significant additional housing investment.

Caveat

These projections are based on past trends and can only form a starting point for understanding future investment requirements. But lower levels of output will put increasing strains on the housing market, worsening affordability and restricting access to adequate housing. And if, as we all hope, the economy moves back towards longer-term patterns of growth, even more housing investment will be required to meet resultant demands.

Annex A

Population and household projections

DCLG published 2011-based household projections in April 2013 in a Statistical Release, *Household Interim Projections 2011 to 2021, England*, referred to subsequently in this Annex as 'Household Interim Projections'. It was accompanied by a methodology report, *Updating Department for Communities and Local Government's Household Projections to a 2011 Base*, referred to subsequently as 'Updating... 2011 Base'. It states (on page 10) that some of the household figures were partly estimated and not taken directly from the Census. For convenience, all the figures for 2011 are referred to as 2011 Census figures. There is thus a possibility of revisions when actual Census figures become available, but there are no reasons now to think that they will show a very different picture.

The population projection by the ONS which DCLG used for its 2011-based household projection reaches only to 2021. For a household projection that reaches to 2031, a population projection for 2031 is required which is compatible with that for 2021 used by DCLG.

Population in 2031

The population projection for England that was used by DCLG for its 2011-based household projection is ONS's *Interim 2011-based Subnational Population Projections for England*, published in September 2012. It reaches only to 2021, and is adapted from the 2010-based population projections. At national level it has the same assumptions about birth rates, death rates and migration into and out of England as were used in the 2010-based projections. At local authority level some changes were made to projected out-migration, but these do not affect the national totals. The starting population in 2011 is higher than in the 2010-based projection as it takes on board the

Census population total. The larger number of women of child-bearing age in the population found by the Census results in more births being projected with the same birth rate assumptions. The slightly smaller number of older people reported by the Census similarly results in lower numbers of deaths. Table A1 shows the components of difference between the 2010- and 2011-based projections of the population of England in 2021 and in the 2011 base population.

Neither the higher base population nor the larger number of births between 2011 and 2021 can affect the increase in the population of household-forming age between 2021 and 2031. The effect of deaths will be small: ONS states (*Interim 2011-based Subnational Population Projections for England*, page 4) that by the tenth year of the projections (i.e. 2021) the difference made to the number of deaths will be less than 1,000 a year. The increase in the population aged 15 and over between 2021 and 2031 shown by the 2010-based population projection can therefore be taken as compatible with the 2011-based population projections for 2011-21, apart from a very small allowance for deaths. A token figure of 5,000 for fewer deaths is therefore added to the projected increase of 3,782,000 in the population aged 15 and over. This gives an increase of 3,787,000, and a total of 50,824,000 in 2031, as compared with 47,037,000 in 2021.

The next step is to separate off the institutional population to leave the household population. At ages under 75 the institutional population remains constant at 2001 levels in 2011 and 2021 (*Updating... 2011 Base*, page 8), and the same is assumed for 2031. In the 75-84 and 85 and over age groups the institutional population is a constant share, specific for marital status and sex. The institutional population in the 75-84 and 85 and over age groups is lower in proportion to the total population in 2021 than in 2011, presumably due to changes in the mix of marital statuses. A similar difference is assumed to occur between 2021 and 2031. An estimate of the household population in 2031, analysed by age, is shown in Table A2, along with comparable figures for 2011 and 2021.

Table A1
Differences in projection of the population of England in 2021

	2010-based projection	2011-based projection	Base population	Difference due to births	Difference due to deaths	Total difference
thousands						
2011	52,655	53,107	452	0	0	453
2021	57,020	57,688	452	184	32	667

Source: *Interim 2011-based Subnational Population Projections for England*. ONS, 2012, Table 1

Minor apparent discrepancies in totals are due to independent rounding

Table A2
Projected and estimated household population by age in England in 2011, 2021 and 2031

Age	2011	2021	2031
	thousands		
15-24	6,606	6,190	7,222
25-34	7,096	7,982	7,440
35-44	7,356	7,328	8,251
45-54	7,278	7,260	7,186
55-64	6,135	6,967	6,930
65-74	4,549	5,480	6,350
75-84	2,821	3,474	4,297
85 and over	963	1,363	2,039
Total	42,804	46,043	49,715

Source: DCLG for 2011 and 2021 figures; 2031 figures are author's estimates

Minor apparent discrepancies in totals are due to independent rounding

Households in relation to population

The 2011 Census showed that the number of households had risen by much less since 2001 than had been projected as recently as 2010 (in the 2008-based projections). Table 6 of *Household Interim Projections* shows that the hypothetical number of households in 2011 calculated from 2011 household representative rates and 2008-based population projections was 375,000 lower than with the 2008-based population and 2008-based household representative rates. The course of household formation between 2001 and 2011 was a very sharp departure from past trends. Taking the 2011 Census data point into the household projection pulled it down a long way. The projected increase in households between 2011 and 2021 is 2,205,000, as compared with 2,454,000 in the 2008-based projection. Only 66,000 (3%) of the increase in households between 2011 and 2021 is the result of increased household formation rates, as compared with 15% in the 2008-based projection (see *Household Interim Projections*, pages 12-13).

A projected increase in households that is almost entirely the result arithmetically of population growth and change is without precedent. All previous projections, right back to the original projections published by the Ministry of Housing and Local Government in 1969 (see Alan Holmans: *Household Projections in England: Their History and Their Uses*. Cambridge Centre for Housing Planning Research, 2012), have included a component of increase due to higher rates of household formation. Such increases in household formation rates were shown by each of the Censuses in 1961, 1966,

1971, 1981, 1991 and 2001. This appears as a strongly established trend, modified where household formation has reached levels that left little room for further increases. That could make the course of household formation in 2001-11 look like an aberration, with the implication of a return in time to the long-established trend. Adverse conditions in the housing market through steep rises in house prices relative to income, and then from 2008 onwards the housing market slump, could logically have depressed household formation, as could the 'Great Recession' in the national economy. If that were the sole or predominant explanation, a return to the trend would be expected as and when economic and housing market conditions improve.

There are, however, reasons for thinking that not all of the shortfall in household formation relative to earlier long-term trends in 2001-11 was the consequence of the state of the economy and the housing market. The first of these reasons is the exceptionally large number of inward migrants in 2001-11 whose household formation rates are initially lower, age for age, than for the population as a whole. Household formation rates are calculated from data for the whole population, which in the years before 2001 from which past trends were established included many fewer immigrants than arrived year by year in the 2000s. The other is less specific: fewer middle-aged and older men and women living alone as one-person households and more in 'other multi-person households' (i.e. two or more members but not couples or lone-parent households). Evidence about lower household formation rates by recent immigrants was published in *More Household to be Housed – Where is the Increase in Households Coming From?* (Town & Country Planning Tomorrow Series Paper 5, by Alan Holmans with Christine Whitehead, published in *Town & Country Planning* in October 2006), which used information from the Labour Force Survey about the household status of persons born outside the UK, analysed according to time since entering the country. Table A3 shows this information.

The Labour Force Survey is a survey of the private household population, and so does not include immigrants (and others) who live in institutions such as boarding houses. However, the 2001 Census did include them. Table A4 shows the household status in 2001 of persons who one year previously were resident outside the UK.

For purposes of the present calculation these ratios of household reference persons to population are taken to be implicitly included in the populations from which were derived the household formation rates used in the 2001-based household projections (and earlier projections). The difference made to the number of households by inward migration depends on the difference between the household formation rates of immigrants and of the whole population.

For the private household population these differences are shown in Table A3. Because so many recent immigrants live in institutions (see Table A4) a comparison is made between the percentages of reference persons among immigrants shown in Table A4 and percentages of household reference persons (or household representatives) in the whole population. These are shown for 2001 in Table A5.

The totals of households and population from which were calculated the household representative rates from the 1971, 1981, 1991 and 2001 Censuses used for projecting future representative

rates, and hence households, are a combination of immigrants and UK-born populations and household representatives. The effect of immigration on whole-population household representative rates depends on the volume of immigration and what in Table A5 is termed the 'immigrants difference'. There is not the information to hand to estimate the 'immigrants difference' for earlier years. Numbers of immigrants are shown in Table A6. The study of future demand and need relates to England, so figures for the inflow of migrants to England must be used, not the UK. Figures for the UK are also included, to show how much scaling is needed where no England

Table A3
Ratio of household reference persons to total private household population, England, 2002-05

	Age				
	16-24	25-29	30-44	45-64	65 and over
	%				
Born outside the UK					
Entered less than five years ago	23.8	37.9	49.1	57.8	29.4
Entered UK five or more years ago but less than ten years ago	19.6	43.3	52.9	57.9	43.6
Entered UK ten or more years ago but less than 20 years ago	10.5	45.9	55.6	60.5	50.5
Entered UK 20 years or more ago	23.5	41.4	58.1	60.0	69.8
Born in the UK	13.7	45.9	57.3	59.7	70.5
Whole private household population	13.7	43.5	56.3	59.0	70.1

Source: A. Holmans with C. Whitehead: *More Households to be Housed – Where is the Increase in Households Coming From?* Town & Country Planning Tomorrow Series Paper 5. TCPA, Oct. 2006. Published in *Town & Country Planning*, 2006, Vol. 75, Oct., Table 6

Table A4
Household status of persons resident outside the UK one year previously in 2001 – England and Wales

Age	Communal establishments	Private households	All persons	Household reference person	Percentage of reference persons
	thousands				%
0-15	3.4	54.0	57.4	0	–
16-24	31.8	74.2	106.0	8.1	7.6
25-34	12.1	109.5	121.6	30.9	25.4
35-49	2.8	56.3	59.1	24.8	42.0
50 and over	1.0	25.4	26.4	10.7	40.5
Total	51.1	319.4	370.5	74.4	

Source: A. Holmans with C. Whitehead: *More Households to be Housed – Where is the Increase in Households Coming From?* Town & Country Planning Tomorrow Series Paper 5. TCPA, Oct. 2006. Published in *Town & Country Planning*, 2006, Vol. 75, Oct., Table 4. Original data from *Census 2001: National Report for England and Wales Part 2*. ONS, 2004, Tables T33 and T34

Minor apparent discrepancies in totals are due to independent rounding

figures are available (for example for age and sex). Table A6 covers 1981-2010. Before 1991 the source is the International Passenger Survey. From 1991 onwards the Long Term International Migration series is more comprehensive. Figures for 1991 are shown on both bases.

The average inflow of immigrants to England from outside the UK was 316,000 a year in 1991-2000 and 500,000 in 2001-10. The average for 1981-90

shown in Table 6 is 221,000. This, as mentioned above, is on a different basis from the figures for 1991 onwards. The Long Term International Migration figure for 1991 is 1.32 times the International Passenger Survey (IPS) figure. If this ratio is used to upscale the IPS figure, then the average in 1981-91 to compare with 1991-2000 would be 290,000. 316,000 in 1991-2000 and 290,000 in 1981-90 can be taken as the number of

Table A5
Ratios of household reference persons to population in 2001 - immigrants and whole population

	Age			
	16-24	25-34	35-49	50 and over
	%			
Immigrants (from Table 4)	7.6	25.4	42.0	40.5
Whole population	13.6	47.0	56.5	63.6
Immigrants difference	6.0	21.6	14.5	23.1

Source: Table A4 and HOPS table from the 2003-based household projection

Table A6
International migration inflows to England and to the United Kingdom

International Passenger Survey			Long Term International Migration		
Year	UK	England	Year	UK	England
	thousands			thousands	
1981	153	141	1991	329	294
1982	201	184	1992	268	245
1983	202	181	1993	266	242
1984	201	182	1994	315	284
1985	232	209	1995	312	290
1986	250	223	1996	318	291
1987	211	194	1997	327	299
1988	216	199	1998	398	362
1989	250	227	1999	454	416
1990	267	246	2000	479	438
1991	255	223	2001	481	439
			2002	516	475
			2003	511	470
			2004	589	537
			2005	567	512
			2006	596	534
			2007	574	509
			2008	590	512
			2009	567	493
			2010	591	517

Source: International Passenger Survey, and ONS Long Term International Migration, International Migration, MN Series, Tables 2.06 and 3.06

immigrants whose lower household formation rates were embodied in the household representative rates for 1991 and 2001. The figures for 2001 and 1991 may be combined in proportions of 2:1 to give 307,000 as the annual number of immigrants with lower household formation rates embodied in a household projection from 1991 and 2001 Census household representative rates. The number of immigrants in 2001-10 whose lower household formation rates were not embodied in the 2008-based projections

and earlier projections, with 2001 as the last Census data point, is therefore put at 193,000 a year (500,000 minus 307,000).

To derive the effect of the 'excess' inflow of immigrants in 2001-10 on the number of households from the data in Tables A5 and A6, the age distribution of immigrants is needed. This is summarised in Table A7. These are UK figures, but as proportions can safely be taken as referring to England. Figures for the 1990s are also included. These were part of the population from which the

Table A7
Age distribution of migrants to England from outside the UK

	Age distribution				Total thousands = 100%	Percentage male %
	Under 15	15-24	25-44	45 and over		
	%					
1991-93	14.0	33.6	42.9	9.5	260	48.2
1994-97	11.5	35.7	44.2	8.7	291	52.6
1998-2000	8.7	34.1	50.1	7.2	404	54.9
2001	9.6	33.1	49.7	7.7	439	54.3
2002	7.4	35.9	49.8	6.8	475	55.2
2003	8.0	40.7	42.9	8.4	470	51.3
2004	6.3	38.7	47.2	7.6	537	51.1
2005	4.6	40.6	48.0	6.7	512	55.0
2006	7.9	37.6	47.8	6.7	534	53.4
2007	6.4	37.6	48.1	8.0	512	54.5
2008	5.1	35.1	49.3	10.5	512	52.9
2009	6.5	37.9	47.5	8.5	493	54.1
2010	5.1	41.8	45.5	7.4	517	55.5
2001-10 average	6.7	37.9	47.5	7.2	500	53.7

Source: ONS Long Term International Migration, International Migration, MN Series, Table 2.07

Table A8
Estimation of 'excess' inflow of immigrants relative to household projections in 2001-10

	Age distribution			
	15-24	25-44	45 and over	Total (excluding under 15)
'Excess' inflow of immigrants (annual average), thousands	79	99	15	193
Difference in immigrant and whole-population ratios of household representatives to population, %	6.0	19.3	23.6	
Household formation difference due to 'excess' inflow of immigrants (annual average), thousands	4.7	19.1	3.5	27.3

Source: Tables A5, A6 and A7

2001 Census household representative rates were calculated and so influenced how the 2008-based household projections were calculated. They can be compared with the ages of immigrants in 2001 onwards. To avoid an unduly long table, the data for 1991-2001 are grouped.

Compared with 1991-2000 – a period in which migration flows were included in the population data from which were calculated Census data points for household projections – a smaller proportion of immigrants in 2001-10 were under 15 years old, which indicates a lower proportion of family households. There was a higher proportion of immigrants aged 15-24; and compared with 1991-97 a higher proportion aged 25-44.

The 'excess' inflow of immigrants in 2001-10 relative to what was implicit in the household projections, 193,000, may be apportioned by reference to the age ranges in Table A7. These amounts have to be multiplied by the difference between the ratio of household reference persons to population for immigrants and that for the whole population (Table A5). The differences in the 25-34 and 35-49 age groups in Table A5 have to be combined, by reference to the numbers of persons in the 25-34 and 35-49 age groups in Table A4. Table A8 shows the calculation.

The calculation in Table A8 puts 27,000 a year as the effect on the total of households of immigration in 2001-10, having run higher than implicitly assumed in the household projections. This looks high relative to the difference of 375,000 between the projected increase in households between 2001 and 2011 and the inter-Census increase. Relevant here is how many of the additional immigrants in the 2000s were from the European Union (EU). In the later 1990s and in 2001, 2002 and 2003 immigration of EU citizens ran at between 60,000 and 70,000 annually. But from 2004 the number rose fast, to an average of 183,000 a year in 2006-10. The 'new' immigrants from the EU could well have been more likely to live in shared accommodation and boarding houses than people in longer-established migration flows. There is considerable uncertainty; but 20,000 a year – 200,000 in the decade – would look more credible in relation to the difference of 375,000 between the projected household total in 2011 and the actual figure shown by the Censuses.

Alternative paths for totals of households in England from 2011 to 2031

Two alternative paths for households in 2011-31 are put forward. The first may be termed the 'modified trend projection'; the other may be termed 'extended official projection', in which ratios of households to private household population in each

age range in 2011 and 2021 are assumed to apply to the projected population in 2031.

The 'modified trend projection' assumes that the long-term upward trend of household numbers relative to population from 1961 to 2001 was still 'alive' in 2011, so to speak, but was overlain by two forces that reduced the number of households in 2011 – one permanent but not cumulative; the other temporary but nonetheless fairly long lived. The permanent reduction is the 200,000 attributed to the number of immigrants (with lower household formation rates) in 2001-11 being much higher than the levels before 2001 which were in the data from which the 2001 and earlier household representative rates were derived. The higher than implicitly projected numbers of immigrants with lower household representative rates resulted in the projected number of households in 2011 being too high. This led to the 2011 base for household projections being too high. A lower base lowers the projections in all subsequent years. The 2011 Census household projection included actual immigration in 2001-11; so there is no cumulative effect: the number of households is reduced by 200,000, relative to the long-term trend in each year.

The effect of depression in the economy and the housing market may next be considered. At the time of writing (August 2013) the British economy is below pre-recession levels and growing only slowly; and the housing market is showing signs of revival, but from a very low level. For present purposes it would seem reasonable to assume that economic/housing market effects on household formation remain at the 2001-11 average level (17,500 a year) to 2015. It can then be assumed to decline, and the annual net increase in households can be assumed to move back towards the long-term trend. What rate to assume – effectively the rate of movement back to long-term trend – is one question. The other is whether a full return to the 1961-2001 trend can reasonably be assumed; or whether something less than a full return is more plausible. Commonly held views about long-term prospects are coloured by the current situation; but it seems on balance reasonable to assume a slightly less than full (by, say, 2,000 a year) return to the long-term trend. The rate of movement back to trend is taken to be 2,000 a year. With this rate of movement back towards the trend, the modified long-term trend (i.e. to minus the 2,000 a year which is not regained) would be reached in 2022. Such sequences are artificial. The best that can be done is for the figuring to be fully explicit, so that the effect of varying any of the parameters can readily be calculated.

The long-term trend can conveniently be represented by the 2008-based projection. It is not ideal for the purpose because it is based on a different population projection and includes a scaling down of household formation at ages under 35 in the light of

Table A9**Projections of households in England in 2011, 2021 and 2031**

	2011	2021	2031
	thousands		
'Extended official projection'	22,102	24,307	26,326
'Modified trend projection'	22,102	24,332	26,593
Official 2008-based projection	22,389	24,843	27,124
Average annual increases	2011-21	2021-31	
'Extended official projection'	221	202	
'Modified trend projection'	223	226	
Official 2008-based projection	245	228	

Source: Table 2; DCLG; and author's estimate

Table A10**Age of household representatives in 2011, 2021 and 2031**

Age	2011	2021	2031 'Extended official projection'	2031 'Modified trend projection'
	thousands			
15-24	810	785	946	956
25-34	3,094	3,324	2,946	2,976
35-44	4,195	4,344	5,083	5,135
45-54	4,322	4,496	4,628	4,675
55-64	3,732	4,229	4,200	4,242
65-74	2,974	3,429	3,797	3,835
75-84	2,143	2,544	3,025	3,056
85 and over	832	1,157	1,701	1,718
Total	22,102	24,307	26,326	26,593

Source: See Table A2

Minor apparent discrepancies in totals are due to independent rounding

data for 2001-09. But it is probably close enough for present purposes. The projection produced in this way is shown in Table A9. An alternative that may be considered is to take the official projection from 2021 to 2031. The difference between the ratio of households to household population in each age group in 2011 and 2021 was added to or subtracted from the ratio in 2021 to give ratios in 2031. These ratios were applied to the projected household population in each age range in 2031 in Table A2. The projections are shown in Table A9. The 2008-based projections are also included in the table. The 2008-based projection figure for households in 2011 is too high to be a base for a new household projection.

For work on demand and need for housing, the average annual increase in the projected number of households is usually more significant than the levels. Between 2011 and 2021 the 'modified trend

'projection' increase is very close to the official projection as a consequence of the shortfall of households relative to trend being unchanged from 2001-11 as far as 2015, followed by a reduction of only 2,000 a year in the difference from the trend ratio of increase. Alternative assumptions could, of course, be made. From 2021 the modified trend is, by assumption, 2,000 a year less than the long-term trend, as represented by the official 2008-based projections.

Household age and type

The 'modified trend projection' of households in total in 2021 is only 25,000 different from the official projections, so an estimate of the age distribution is not needed. The 'extended official projection' for

Table A11
Household projections by type of household to 2031

Age	2011	2021	2031 'Extended official projection'	2031 'Modified trend projection'
thousands				
Couple households	11,973	12,846	13,674	13,674
Lone-parent households	1,712	2,114	2,251	2,251
Other multi-person households	1,632	1,956	2,150	2,150
One-person households	6,785	7,392	8,251	8,518
All households	22,102	24,307	26,326	26,593

Source: Table A10

Minor apparent discrepancies in totals are due to independent rounding

2031 was made by estimating the number of households in each age range and then adding them. An age distribution is therefore to hand. New estimates of households in age ranges are, however, needed for the 'modified trend projection' for 2031. It is 267,000 higher than the 'extended official projection' figure. A pro-rata distribution of this difference is used in the figures in Table A10.

Estimates of numbers of households by type were obtained for the 'extended official projection' for 2031 by apportioning the totals of household in each age group between household types pro-rata to households by type in each age range in the official projection for 2021. For the 'modified trend projection' the difference from the 'extended official projection' (267,000) was taken to consist entirely of one-person households. The difference between past trend projections as exemplified by the official 2008-based projection was greatest for one-person households. The additional one-person households are distributed pro-rata to one-person households in the 'extended official projection'.

Cross-tables of type of household by age are the source of the '2031' columns in Table A11. They are not reproduced here for reasons of space, but they have been retained for use in testing alternative assumptions about numbers of households in 2021 and 2031.

Annex B

Comparison with 2006-based estimates of future housing demand and need

A comparison may usefully be made with the 2006-based estimates of the numbers of households in the market and social sectors in 2006 and 2021

produced by the Cambridge Centre for Housing Planning Research, for Shelter, in 2008, published in Table 11 of *Homes For the Future*. This table is reproduced here as Table B1.

That the effect of change in the mix of household types and ages in the 2006-based estimate was greater than in the 2011-based estimate in Table 11 in this paper is explained by the larger difference between types of household in the base year (2006) and final year (2026) than between 2011 and 2031. Table B2 shows the proportions in 2006 and 2026.

Comparison with Table 12 in this paper shows that a much larger increase in the proportion of one-person households was projected in the 2006-based estimate (in fact, DCLG's 2004-based households projection) and a larger decline in the proportion of couple households.

That the effect of 'rolling forward' market sector proportions in the middle and higher age ranges is

Table B1
2006-based estimate of components of change in numbers of households in the market and social sectors

	Market sector	Social sector	Total
thousands			
Overall increase in households	+3,213	+1,243	+4,456
'Roll forward'	+684	-684	0
Change in the mix of household types and ages	-390	+390	0
Total	+3,507	+949	+4,456

Source: *Homes for the Future – A New Analysis of Housing Need and Demand in England*. Cambridge Centre for Housing Planning Research, for Shelter, Nov. 2008, Table 11

Table B2
Proportions of types of household in 2006 and 2026

	2006	2026	Change
	%		
Couple households	53.9	47.4	-6.5
Lone-parent households	7.7	7.4	-0.3
Other multi-person households	6.7	6.8	+0.1
One-person households	31.7	38.4	+6.7
All households	100.0	100.0	0

Source: *Homes for the Future – A New Analysis of Housing Need and Demand in England*. Cambridge Centre for Housing Planning Research, for Shelter, Nov. 2008, Table 1

Table B3
2004- and 2011-based population projection for 2011 and 2021

	2011	2021	Projected increase
	thousands		
2004-based population			
Aged 0-14	8,856	9,076	220
Aged 15 and over	43,111	45,529	2,418
Total	51,967	54,605	2,638
2011-based projection			
Aged 0-14	9,386	10,654	1,268
Aged 15 and over	43,721	47,034	3,313
Total	53,107	57,688	4,581

Source: 2004-based Government Actuary's Department; ONS's *Interim 2011-based Subnational Population Projections for England*

much larger in the 2006-based estimate than in the 2011-based estimate of the market and social sectors in 2031 is less readily explained. That the 2004-based household projection used for the 2006-26 calculation has five-year age ranges whereas the 2011-based projection has ten-year ranges probably contributed, because with five-year ranges the 'roll forward' effect can be calculated more precisely. But experiments with ten-year groupings in the 2006-26 calculation suggest that the difference made by ten- rather than five-year age groups is unlikely to be large. A more detailed comparison of the effects on the 'roll forward' of the different mixes of household types (Tables 10 and 12) and different market sector shares in each age

range would be needed to be more specific about the reason. That the effect of 'rolling forward' market sector proportions in the middle and higher age ranges does no more in the 2011-based calculation than offset the effects of changes in the mix of types of household is noteworthy. In all previous estimates of future demand and need that used this method, the effects of 'rolling forward' were greater than the effect of a changing mix of household types.

The demographic base of the 2006 estimates of future housing demand and need in England was the official 2004-based projection of the population, and the household projection derived from it. The 2004-based population projection is compared with the 2011-based projection in Table B3.

Annex C

Loss of re-lets due to earlier sales to sitting tenants

The projected division of the total of households between sectors in the final year (2031 in the present instance) depends not only on the divisions of the projected household totals but also on the number of 'Right to Buy' owner-occupier households coming to an end. If they had remained in the social sector there would be a dwelling available for re-letting when they dissolve; but when bought for owner-occupation there is a market sector vacancy when the household dissolves. In 2008 new estimates were made of the number of 'Right to Buy' owner-occupier households. For the present, this estimate may be updated rather than fully re-worked. For couples, estimates were made of couple 'Right to Buy' households becoming one-person households due to death of one of the partners; and then, after an interval, the household coming to an end with the death of the successor one-person household. The numbers of one-person households coming to an end by death were estimates from age distributions and age-specific mortality rates. The calculation made in 2008 is summarised in Table C1 overleaf. The line 'moves to communal establishments' refers to one-person households coming to an end as a consequence of moving permanently to a care home or nursing home. Such moves bring forward in time household dissolutions which would otherwise have happened later due to death.

Table C1 was calculated using data from the English Housing Survey for 2003-04, 2004-05 and 2005-06. This study uses data for 2008-09, 2009-10 and 2010-11. There is therefore a five-year difference, which may be considered short enough for the 20-year percentage reductions in Table C1 to be used in the present study. Table C2 overleaf shows the calculation with 'Right to Buy' owner-occupiers of each type of household taken from Table 6.

Table C1
Reductions in 'Right to Buy' households due to dissolution, 2006-26

	2006	2026	Reduction	
			Number	%
Couple households	776	581	195	25
Lone-parent households*	56	55	1	2
Other multi-person households	123	74	49	40
One-person households	343	125	218	64
Moves to communal establishments	–	–23	23	–
Total	1,298	812	486	37

* That so few dissolutions are shown is due to so few lone parents being in the age ranges where dissolutions are common – see Table 7

Source: *Housing Need in England: Technical Report on Sources and Methods*. Cambridge Centre for Housing Planning Research, 2008, Annex A (Table A4)

Table C2
Reduction in 'Right to Buy' owner-occupier through dissolution, 2011-31

	2011	2031	Reduction
Couple households	548	411	137
Lone-parent households	28	27	1
Other multi-person households	106	64	42
One-person households	252	91	161
Total of above	934	593	341
Moves to communal establishments (between 2011 and 2031)*	–	–	17
Total reductions 2011-31	–	–	358

* Moves to communal establishments are a flow between 2011 and 2031 and so do not appear in the total for either year.

Source: Tables 6 and C1

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