

# **Review of GL Hearn's Guildford Addendum to the West Surrey SHMA**

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**NMSS**

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This report has been prepared for local residents' associations and parish councils.

**Neil McDonald** is an independent adviser and commentator on housing demographics. He works with local authorities and others on the estimation of housing need and related issues.

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NMSS take considerable care to ensure that the analysis presented is accurate but errors can slip in and even official data sources are not infallible, so absolute guarantees cannot be given and liability cannot be accepted. Statistics, official or otherwise, should not be used uncritically: if they appear strange they should be thoroughly investigated before being used.

# Review of GL Hearn’s Guildford Addendum to the West Surrey SHMA

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# Review of GL Hearn's Guildford Addendum to the West Surrey SHMA

## Executive Summary

- i. This report reviews key elements of GL Hearn's report, "West Surrey Strategic Housing Market Assessment: Guildford Addendum Report 2017" that relate to Guildford's objectively assessed need for housing (OAN). It follows up an NMSS report in June 2016 on the aspects of the West Surrey SHMA that related to the Guildford OAN.

### **Producing projections for Guildford is challenging due to the large number of students and errors in the historical data**

- ii. Guildford presents many challenges to those seeking to project its future population and household growth. This is because it has a large student population and the historic population data for the district contains sizeable inaccuracies. The latter point is clear from the Office for National Statistics' own data which shows that the population increase between 2001 and 2011 estimated using the ONS's figures for births, deaths and migration flows (i.e. 15,000) is more than 90% larger than the increase suggested by the difference between the 2001 and 2011 census counts (i.e. 7,800). This is an exceptionally large discrepancy and indicates that there were large differences between how the ONS thought the population of Guildford was changing between 2001 and 2011 and what was actually happening.

### **It is probable that out-migration from Guildford has been under-recorded and, as a result, the DCLG projections have over-estimated the likely increase in households by a large margin.**

- iii. A detailed examination of the discrepancies between the various ONS datasets has shown that the only plausible explanation is that net migration into Guildford has been over-estimated, most probably as a result of a sizeable under-recording of migration out of Guildford.
- iv. It seems probable that the under-recording of out migration has continued after 2011. This has major implications. In particular, the ONS's 2015 population estimate for Guildford may be too large and DCLG's 2014-based population projection may overstate the likely increase in housing by a substantial margin. An alternative calculation making plausible and logical adjustments to the estimated outflows in the period 2001-15 would reduce the demographically-based estimate of the number of homes needed from 558 homes a year (2015-34) to 404.

**Student housing needs are probably already catered for in the DCLG projections but a much fuller separate analysis is needed.**

- v. An examination of the DCLG projections for the growth of households of the type and age formed by students renting in the general housing stock in Guildford suggests, contrary to GL Hearn's conclusion, that those projections include more than enough additional housing to meet the projected growth in the student population. However, there is a need for a fuller analysis which separates out student housing needs from other housing needs as the DCLG household projection methodology is not suited to estimating the needs of students and the inclusion of students in the statistical base used for the those projections may have distorted the projections made for non-student housing.

**The estimates of the number of homes needed to support forecast job growth need to be re-worked.**

- vi. The GL Hearn estimates of the number of homes needed to support economic growth are flawed as they use economic activity rates which are different from those used in the job forecasts on which they have based their estimates. This can have a large impact on the estimate made of the number of homes needed to support job growth, sometimes producing absurdly large figure. For example, if, when assessing the housing implications of a jobs forecast, GL Hearn assume that fewer people over 55 will be part of the labour force than was assumed when the forecast was produced:
  - a. GL Hearn will estimate that a bigger population would be needed to supply the workforce assumed by the forecaster – implying a need for more homes than are necessary.
  - b. The forecast will not be consistent with GL Hearn's view of how the labour market will change. Indeed, had the forecaster used GL Hearn's assumptions they would have concluded that the available labour force will be smaller and as a consequence forecast a smaller increase in jobs.
- vii. The SHMA Addendum does not provide sufficient detail of the jobs forecasts for others to re-work the estimates of the homes needed to support economic growth. The unwillingness by some parties to release data assumptions is also an issue. Hence the only option is to invite GL Hearn to redo the analysis.

**Affordability adjustment**

- viii. The earlier NMSS report showed that Guildford did not stand out from other Surrey districts in terms of affordability. It is a highly desirable place to live being surrounded by very attractive countryside yet with both a strong local employment base and good commuter links to London. Increasing housing supply beyond the numbers suggested by the demographic analysis would not have a noticeable impact on house prices: it would simply attract more to live in the area.

**Further work is needed before we will have a sound basis on which to estimate Guildford's housing needs.**

- ix. This review has shown that attempting to estimate Guildford's housing needs using the DCLG projections with little or no adjustment has introduced large errors. Considerable further work is needed before there will be a sound basis on which to estimate Guildford's objectively assessed need for housing.
- x. In view of the desire to make timely progress with the Local Plan, it is proposed that an early meeting is sought with Guildford Borough Council and GL Hearn to discuss these findings and consider a way forward.

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# Review of GL Hearn’s Guildford Addendum to the West Surrey SHMA

## 1. Introduction

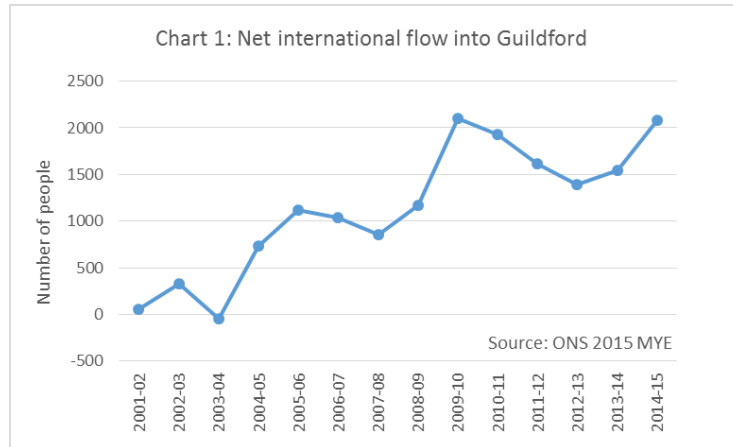
- 1.1. This note reviews those elements of GL Hearn’s report, “West Surrey Strategic Housing Market Assessment: Guildford Addendum Report 2017” of March 2017 that relate most directly to the estimation of Guildford’s objectively assessed need for housing (OAN). It is not a full review of all aspects of that report. It follows up an NMSS report in June 2016 on the aspects of the West Surrey SHMA that related to the Guildford OAN.

## 2. Are the latest projections a sound basis for estimating Guildford’s objectively assessed need for housing?

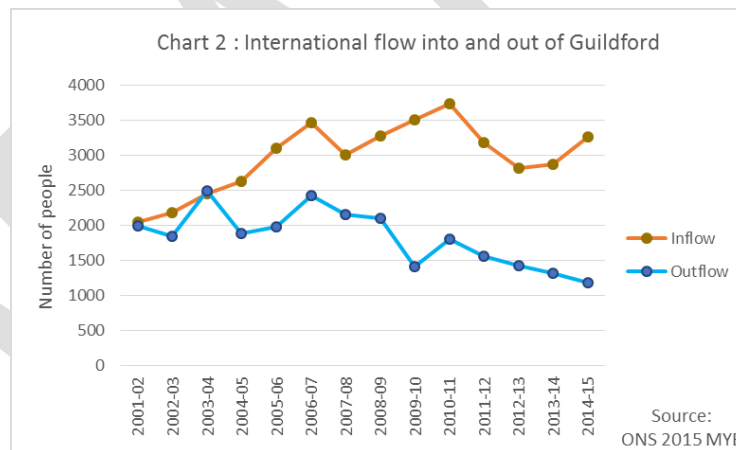
- 2.1. GL Hearn’s Guildford Addendum to the West Surrey SHMA updates the SHMA using the latest household projections (DCLG’s 2014-based projections) and latest population estimates (the ONS’s 2015 Mid-Year Estimates – the “2015 MYE”). They do not use these new sources uncritically but after reviewing them conclude they that they are “technically sound”. However, a more detailed examination of the new projections and estimates casts significant doubt on their reliability and suggest that they may over-estimate Guildford’s likely population growth by a sizeable margin. This examination also reinforces the case for adjusting the projections to take account of errors in the historical estimates of migrations flows and underscores the importance of a more thorough and free-standing appraisal of the housing needs of students.

### Reviewing the historical data

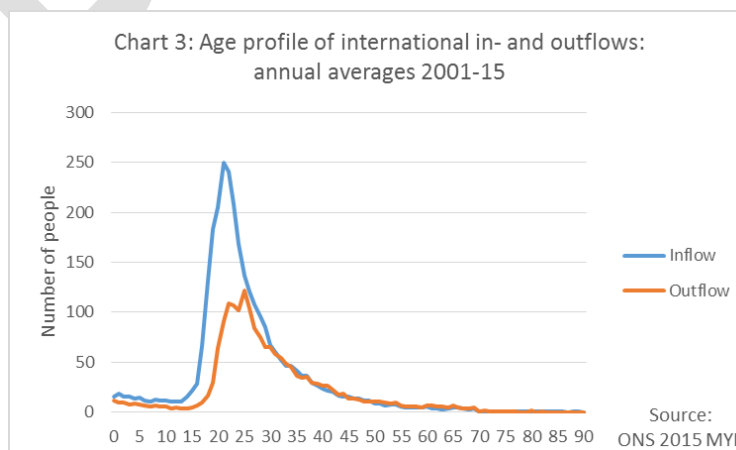
- 2.2. The latest of the historical data is set out in the 2015 MYE – although it should be noted here that the figures are presented by the ONS as estimates, the ONS being fully aware some elements of the datasets are subject to significant uncertainty. GL Hearn summarise the figures for Guildford in their Table 1. That table makes it clear that over the period covered by the estimates there has been a substantial rise in net international migration. Chart 1 presents the figures for net international migration:



- 2.3. As can be seen from the chart, the net international flow is estimated to have changed from a relatively small net inflow in the early years of the century to an inflow over 2000 people in 2015. This is a substantial and highly significant change in the context of average annual population growth over the period 2001-15 of 1,165 people a year. It merits more detailed examination.
- 2.4. Chart 2 disaggregates the net flow into its constituent parts: the gross in- and outflows. This reveals that inflows have been rising somewhat erratically whilst outflows have been falling fairly steadily:



- 2.5. To understand what has been happening it is necessary to look at the age profiles of those who have been arriving and leaving – see Chart 3;



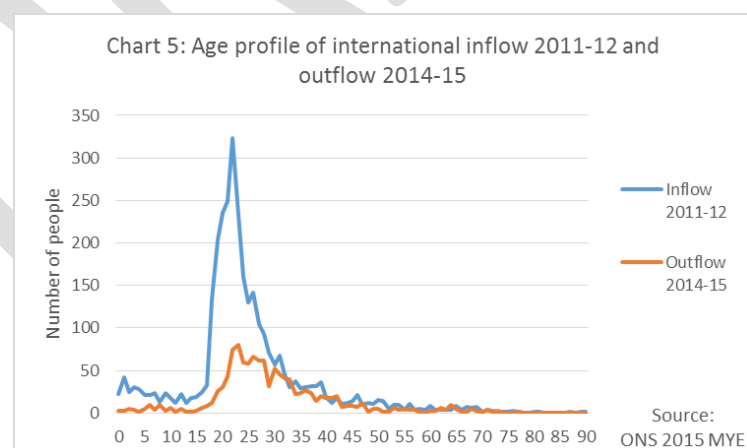
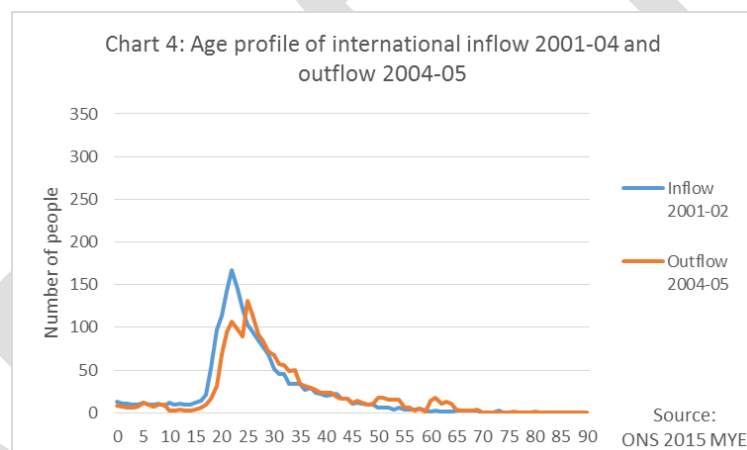


2.6. Two points are immediately obvious from this chart:

- The inflows peak in the age group 18-25 and the outflows 3-4 years later, in the age group 21-28.
- In those age groups average outflows have been approximately half the inflows.

This suggests that the dominant factor in international flows is students coming to study in Guildford and leaving 3-4 years later but that only around half are recorded as leaving the country.

2.7. Chart 3 presents the age profiles of the average annual in- and outflows over the period 2001-15. There has however, been a significant change in the pattern over this period as can be seen from Charts 4 and 5 which present the data for the inflow in one year and the outflow 3 years later at the beginning and end of the period for which the 2015 MYE provides data. (Inflows are compared with outflows 3 years later to avoid any growth in the volume of international students distorting the comparison between the in- and outflows):



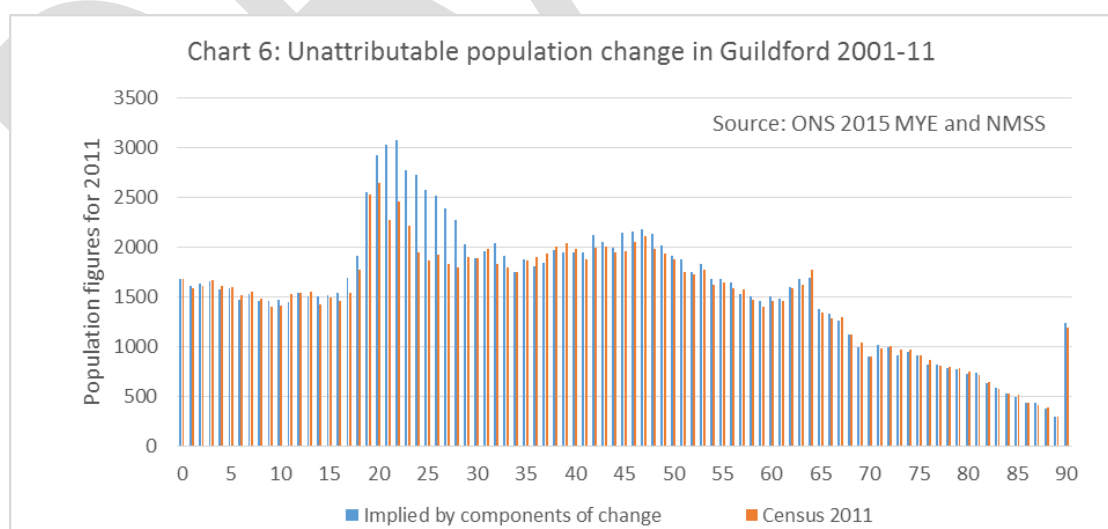
2.8. The two charts have been drawn on the same scale to facilitate a fair comparison. That comparison is stark. It is clear that:

- Whilst the inflow has grown substantially, the outflow has not only failed to keep pace but has fallen.

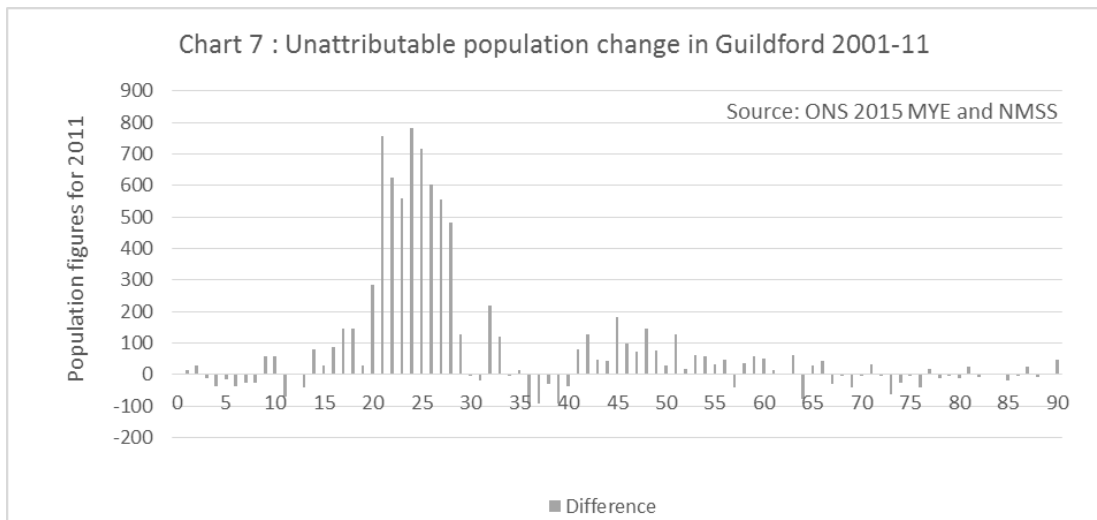
- For the earlier period (Chart 4) the outflow aged 21-28 was a little less than 90% of the inflow aged 18-25 three years earlier. For the later period the outflow was only 30% of the inflow.
- 2.9. Whilst it is possible that part of that change is attributable to more international students staying on in Guildford or moving elsewhere in the UK, it seems unlikely that this accounts for anything like the full change that the data suggests. The alternative explanation is that there are significant errors in the migration data.
- 2.10. There are a number of independent pieces of evidence that point to errors in the migration data being a significant factor.

**(a) The age profile of Unattributable Population Change strongly suggests errors in migration estimates for student age groups**

- 2.11. Unattributable Population Change (UPC) for the period between the 2001 and 2011 censuses is simply the difference between the 2011 census population estimate and the estimate calculated by starting from the 2001 census figures and adjusting for births, deaths and migration flows (the ‘components of change’) in the period up to 2011. The difference – the number of people who cannot be accounted for by the data for births, deaths and migration – is the UPC.
- 2.12. UPC can be expressed both as a total figure for all ages and both genders or as the discrepancy in each year of age and gender group. The latter can be calculated by adding to the 2001 census age profile the impact of births, deaths and migration flows to produce an estimated age profile for 2011 i.e. by ‘rolling forward’ the 2001 census estimates using the estimated components of change. The ‘rolled forward’ estimate can then be compared with the 2011 census age profile. Chart 6 makes this comparison:



- 2.13. As the chart indicates, all of the significant discrepancies fall in the age range 21-28. This becomes even clearer if the differences between the rolled forward and census 2011 estimates are plotted – see Chart 7:



- 2.14. It is significant that the major discrepancies all fall in the age range 21-28.
- 2.15. Take, for example, the discrepancy for those aged 21 in 2011 – for which the figure implied by the rolled forward estimate is 755 people higher than the 2011 census figure. As we have high quality systems for recording births and deaths, the discrepancy is likely to be caused by errors in some or all of the census figures for either 2001 or 2011 or the migration estimates. This means that the discrepancy of 755 could be due to:
- An error in the 2011 census figure. However, the 2011 census figure for 21 year olds is 2275<sup>1</sup> so an error of 755 would be 33% - which is highly unlikely.
  - An error in the 2001 census figure. Those aged 21 in 2011 would have been 11 in 2001. The 2001 census figure for 11 year olds was 1569 so an error of 755 would be 48% - even more unlikely.
  - Errors in the migration flows. As the errors in the census numbers would need to be improbably large (even if they were split between the two censuses), it is probable that most of the errors are in the migration flows.
- 2.16. For the figure for 21 year olds in the rolled forward estimate to be too large as a result of errors in the migration estimates either the estimated outflows in the relevant ages and years would have needed to be too small or the estimated inflows would have needed to be too large – or both. In both cases the relevant ages and years are:
- Those who became 21 in 2010-11
  - Those who became 20 in 2009-10
  - Those who became 19 in 2008-09
  - etc. back to those who became 12 in 2001-02

<sup>1</sup> 2,321 from Census via nomis

2.17. The relevant section of the 2015 MYE estimates for out-migration (both internal and international, males and female) is shown in Table 1 with the relevant ages and years highlighted:

Age	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
12	81	69	90	64	72	73	61	64	58	61
13	63	71	84	69	82	59	59	43	54	48
14	119	96	138	96	109	101	99	78	58	90
15	67	45	44	53	60	57	40	45	45	42
16	45	62	53	50	58	49	49	39	36	38
17	70	85	77	83	84	78	72	65	70	49
18	154	142	125	166	162	147	143	153	140	147
19	497	493	495	502	509	505	600	530	518	555
20	555	564	535	575	529	510	591	603	561	556
21	517	517	514	520	532	564	529	630	506	478

2.18. It is theoretically possible that the discrepancy could have been shared between all 10 years but, as the figures highlighted in Table 1 show, anything like an equal sharing (i.e. 75 a year) would have implied very large percentage errors in the estimates for flows for the earlier years – flows that involve those under 18. This suggests that the bulk of the errors must have been in the later years and in the ages 18-21.

2.19. The estimated inflows of the relevant ages in the relevant years are shown on a similar basis in Table 2:

Age	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
12	81	81	75	90	73	67	76	61	50	58
13	57	68	55	57	60	49	56	52	51	49
14	50	68	63	55	67	58	39	34	53	44
15	61	70	77	70	68	65	63	69	54	71
16	79	83	63	71	79	70	57	57	58	76
17	111	112	109	105	119	111	121	96	116	101
18	345	328	340	317	362	350	414	388	394	399
19	934	1036	1088	1062	1146	1188	1368	1296	1325	1231
20	527	586	605	590	612	657	682	671	689	813
21	585	535	548	575	649	713	639	685	661	731

2.20. Again, the only plausible option is that the bulk of the discrepancy is in the flows of those age 18-21.

2.21. Whilst it is possible that there were errors in the census numbers and some of the migration flows for those under 18, it seems highly probable that the majority of the errors were in flows in the student age groups. It seems more likely that outflows were under-recorded as:

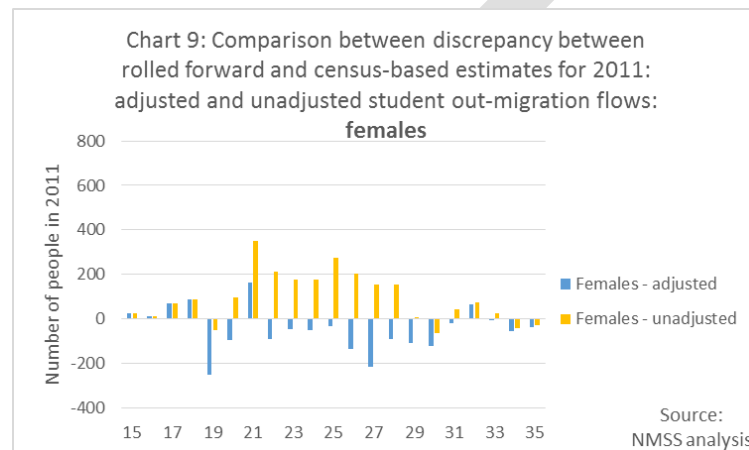
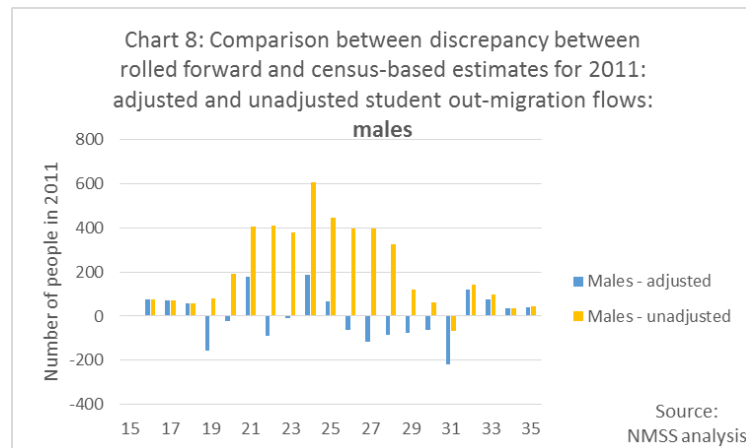
- Under-recording of outflows is inherently more likely than over-recording of inflows. This is because, although the ONS have recently improved their estimating techniques for migration flows to include other data sources, GP registrations are still an important input. Under reporting of outflows can result from graduates failing to register with a GP when they move away from Guildford whereas over-recording of arrivals would need registrations with GPs to be over-counted.
- The fact that the big discrepancies are in the ages 21-28 fits better with outflows being under-recorded as the large outflows are in age groups 3-4

year older than the large inflows and there would be relatively few student inflows over the age of 25.

- 2.22. The West Surrey SHMA of September 2015 discussed the possibility of errors in the historic international out-migration data (paragraphs 4.32 and 4.33). GL Hearn note that if levels of international out-migration were adjusted upwards this would reduce the population in age groups in which there are high levels of internal migration, thereby reducing the estimates made of internal out migration. They suggest that the two effects “would be likely to broadly balance out”. GL Hearn clearly did not carry out any modelling to investigate whether this is in fact the case. Had they done so (as NMSS have) they would have discovered that it is emphatically not so. The adjustments needed to reduce net migration so that the estimates for the period 2001-11 are consistent with the population change recorded by the 2001 and 2011 censuses produce a large reduction in the projected population growth.

**(b) Adjusting the historic outmigration flows in student age groups so that they match inflows largely eliminates the discrepancy between the rolled forward estimate of population and the 2011 census figures.**

- 2.23. The hypothesis that out-migration has been under recorded in student age groups can be tested by adjusting the estimates of migration from Guildford to the rest of the UK and abroad contained in the 2015 MYE. A range of adjustments have been trialled and the closest match between the rolled forward estimate for 2011 and the census-based figure for that year has been obtained by:
- Adjusting internal migration outflows of those aged 22-25 so that they are at least 80% of the inflows three years earlier of those who were three years younger.
  - Adjusting international migration outflows of those aged 22-28 (reflecting the older age of international students) so that, for men, they are at least 70% of the inflows three years earlier of those who were three years younger and 65% for women.
  - Assuming that the numbers leaving aged 19 to attend university elsewhere have been significantly under-estimated. The best fit is obtained by uplifting the recorded outflows of men by 100% and women by nearly 70%.
- 2.24. With these adjustments the total discrepancy between the rolled forward estimate for 2011 and the census-based figure is reduced from 7,200 to just 11 and a much closer match is obtained between the age profiles of the rolled forward and census-based estimates. This is illustrated in Charts 9 (men) and 10 (women) which compare the discrepancies which exists when the MYE 2015 components of change are used in the rolled-forward estimate and when the adjusted out-migration estimates are used:



**(c) The disparity between the historic figures for the growth in the population aged 18-23 over the period 2009-15 and the lack of growth in student numbers over this period.**

- 2.25. GL Hearn note (paragraph 7.9 of the Guildford Addendum) that there is an inconsistency between the historic figures for the 18-23 population (which they take to be the age groups that contain most students) and the figures for student numbers which they have obtained from Surrey University. They comment, “....it looks like the main growth period (2009-15) is one in which student numbers actually decreased.” This leads them to query how well changes in student numbers are reflected in the official figures. However, an examination of the figures for the growth in the estimated population aged 18-23 over the period 2009-15 reveals that the figures have been distorted by the same factors that gave rise to UPC. When these are corrected for the disparity becomes much smaller.
- 2.26. The figures for the 18-23 population come from the 2015 MYE. As already discussed, these are built up from the 2001 census figures rolled forward by taking into account the ONS’s estimates of births, deaths and migration flows and UPC. In order to produce estimates of population by single year of age and gender for the years between the census years ONS have had to allocate the total UPC for the period both by year of age and gender and by calendar year. Table 3

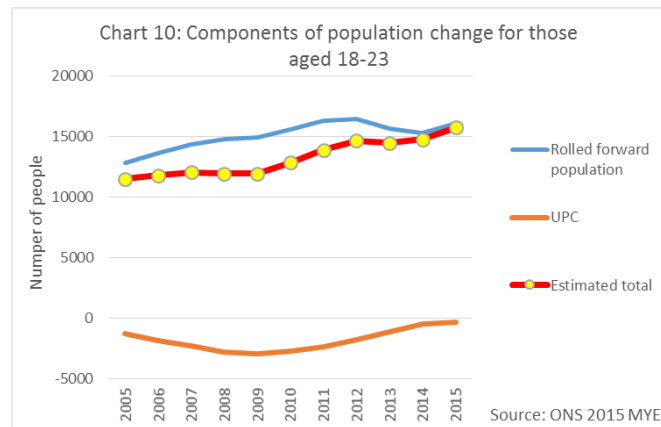
is an extract from the 2015 MYE showing the allocation which the ONS have made for women in Guildford aged 10 to 25.

Age	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
10	5	-8	-8	-1	-3	-2	4	-4	6	-6
11	-10	4	-9	-7	-1	-2	-3	3	-5	6
12	-35	-9	4	-9	-7	-2	-3	-2	4	-4
13	-22	-35	-10	5	-9	-7	0	-2	-2	3
14	-18	-21	-36	-10	5	-9	-8	-2	-3	-3
15	-17	-18	-22	-34	-10	5	-8	-7	-1	-2
16	-27	-19	-17	-20	-35	-9	6	-8	-7	-1
17	-21	-27	-18	-18	-22	-36	-10	5	-9	-7
18	-16	-20	-28	-17	-18	-21	-35	-9	5	-9
19	-16	-16	-21	-28	-18	-18	-21	-34	-8	6
20	-1	-16	-15	-20	-27	-18	-17	-22	-36	-10
21	6	-1	-15	-16	-21	-26	-17	-18	-21	-35
22	-5	7	0	-16	-16	-20	-28	-18	-18	-22
23	-7	-4	6	-1	-15	-15	-21	-28	-18	-18
24	-3	-8	-4	6	-1	-15	-16	-21	-26	-18
25	4	-2	-7	-5	7	-1	-16	-15	-21	-28

- 2.27. The ONS have very little definite information on which to make this allocation. (If they had the evidence, the discrepancy would not be unattributable.) For example, in the case of women aged 21 in 2011 all that the ONS know for certain is that if you start with the census 2001 figure for females aged 11 and then add their estimates for deaths and migration flows for that group as it ages over the period to 2011 the resulting estimate for the number of women aged 21 in 2011 is 351 too high. As can be seen from Table 1, the ONS has divided the total of 351 roughly equally between the 10 intervening years. However, it has no basis on which to determine whether this approximately equal division is correct or not. If, for example, the discrepancy actually occurred in the last 4 years when the group was aged 18-21 (inclusive) then the estimates of the size of the group in the earlier year would have been too low because negative UPC adjustments were made that ought not to have been. For the same reason, the population increases estimated for the last four years would have been too large because too small a UPC adjustment was made to them.
- 2.28. It is possible to calculate how the UPC allocations which the ONS have made have influenced each estimate for the population in each age and gender group in the 2015 MYE by adding up the individual UPC allocations. For example, using the data in Table 3, the estimate made of the number of females age 14 in 2004 will have included UPC allocations of -35 in 2001-02 and 2002-03 and -36 in 2003-04 i.e. a total of -106. This means that, if the UPC actually occurred later on, the estimate made for females aged 14 in 2004 would have been 106 too low.
- 2.29. Using such methods the contribution which UPC has made to the estimates of the population aged 18-23 can be calculated. The results are presented in Chart 10. This shows:
- The impact of UPC (brown line) becomes greater and more negative as you progress through the period between the censuses. This is to be expected as more and more years with negative census adjustments are included. Beyond 2011 the impact becomes less and less negative as UPC adjustments

are not made after 2011: it is assumed that the ONS's estimates for components of change are accurate in this period.

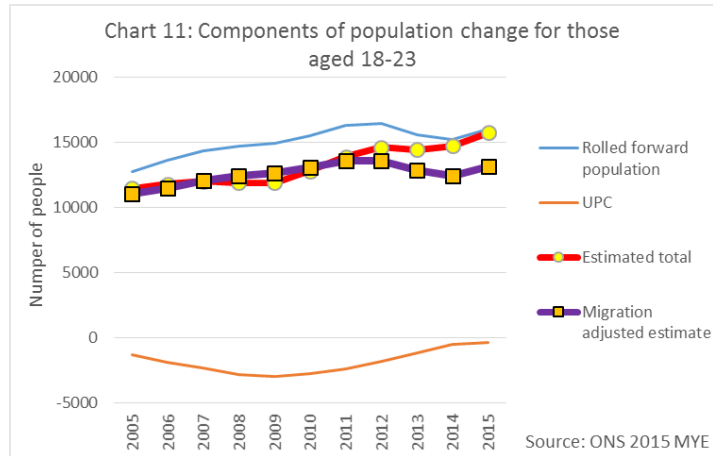
- The rolled forward population estimate (i.e. the starting population plus the impact of births, deaths and migration flows, but with no UPC adjustments) is shown in blue. This grows steadily to 2011 and then levels out before dipping slightly.
- Adding the UPC adjustment to the rolled-forward population estimate produces the MYE's estimate for the total population aged 18-23.



2.30. As can be seen from Chart 10, the 2015 MYE estimate of the population aged 18-23 grows from 11,935 to 15,745 between 2009 and 2015, an increase of 3,810 [at a time when there was little change in the number of students]. At the same time the UPC impact changes from -2,978 to -306, a change of 2672. This means that 70% of the increase in the MYE estimate is due to the assumptions that the ONS have made about UPC.

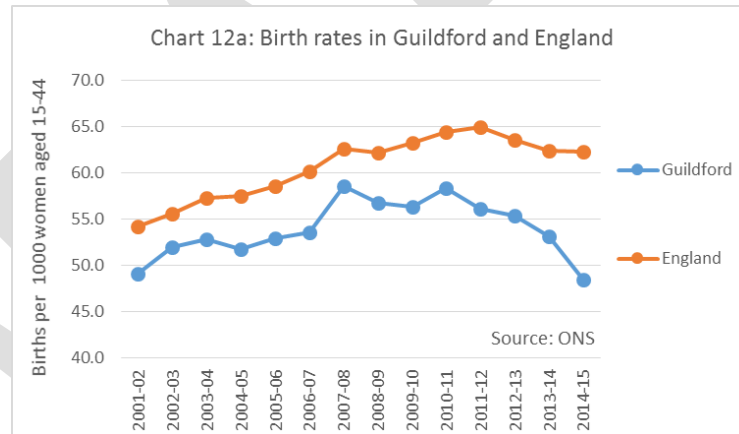
2.31. If, alternatively, the MYE population estimates are adjusted so that outflows in student age groups are at least equal to inflows three years earlier, a rather different profile of the numbers aged 18-23 emerges: the growth in the 18-23 age group occurs earlier and flattens out later in the period. In particular, the growth for 2009 (12,631) to 2015 (13,138) is 507, which fits rather better with the change in student numbers suggested by GL Hearn. A key difference is that the adjusted projection assumes that the adjustments to the migration flows made during the period 2001-11 continue after 2011, i.e. that the under-recording of outflows has continued.



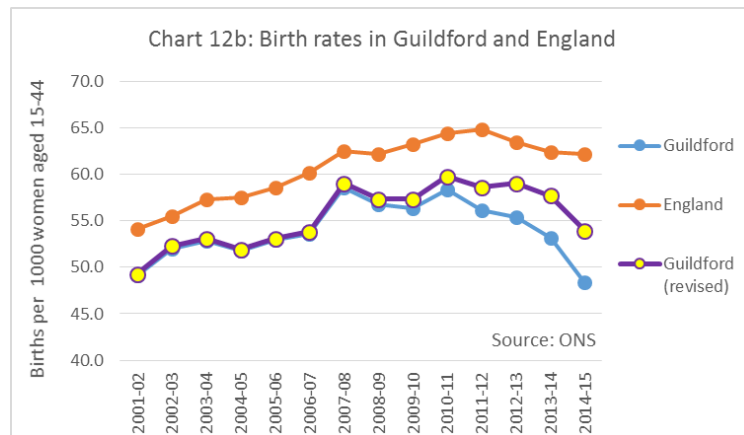


**(d) An explanation for the apparent reduction in fertility rates**

2.32. In separate NMSS analysis it has been noted that the 2015 MYE suggests that since 2010-11 birth rates in Guildford have fallen quite substantially, in marked contrast with the rest of England – see Chart 12a:

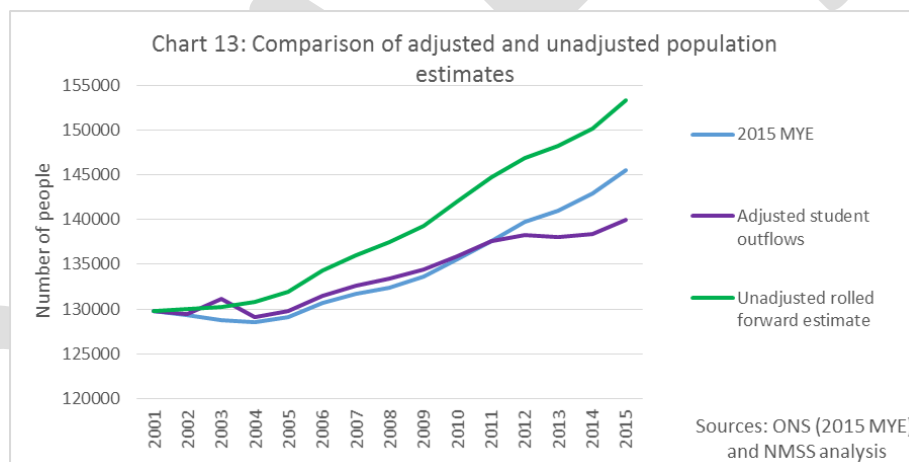


2.33. One possible explanation for this is that the 2015 MYE has over-estimated the rise in the population of women of child bearing age as a result of under-recording of out-migration. If too many women of child bearing age have been estimated to live in Guildford then the apparent fertility rate would be lower than it actually is. Chart 12b shows the effect of re-calculating the fertility rate using the adjusted migration flows used above. As can be seen, the fertility rate becomes much closer to the trend for England as a whole:



### Implications of the under-recording of out-migration

- 2.34. The implications of the under-recording of out-migration on the scale suggested by the above analysis are very substantial. Chart 13 compares the 2015 MYE population estimate (blue line) with the rolled forward 2001 census estimate (i.e. without any UPC adjustments – green line) and an adjusted estimate based on increasing out-migration in student age groups (purple line):



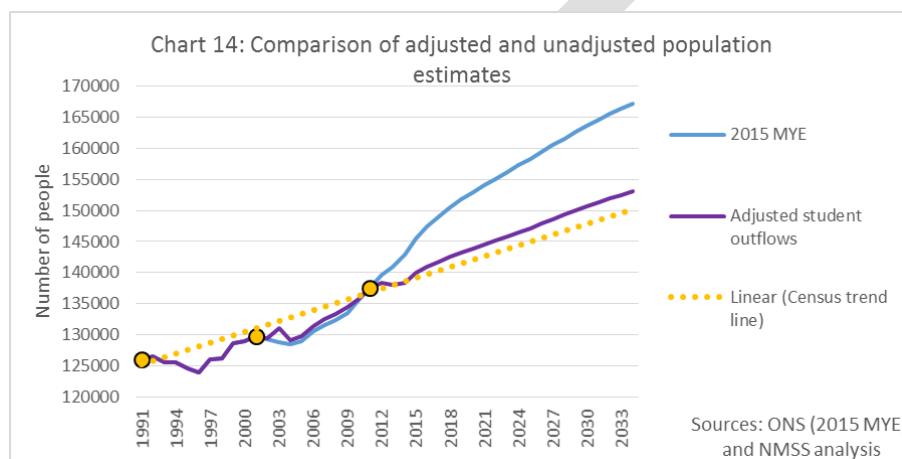
- 2.35. The key points to note are:

- **The unadjusted rolled-forward estimate suggests a population in 2011 that is 7,200 people larger than suggested by the 2011 census. That compares with a recorded population growth of 7,800 between the two censuses. This means that, if the censuses are accurate, the uncertainty – the UPC – is 92% of the recorded increase in population.**
- **Adjusting for the likely under-recording of out-migration produces a more plausible population trajectory – see purple line in chart.**
- **The assumption that under-recording of out-migration has continued results in the conclusion that the 2015 MYE population figure for 2015 may over-state the actual population by a significant margin – possibly by as much as 5-6,000.**

- 2.36. If outflows have been underestimated then:

- the outflow rates used by the ONS to project internal migration will be too low and the projected outflows will therefore be underestimated;
- the international outflows used to share out the national projection for international outflows will be too low, resulting in too small a share of the national outflow being allocated to Guildford; and,
- the starting population for 2014 will have been over-estimated

2.37. The net effect would be an underestimation of outflows and hence an overestimation of the growth in Guildford's population. Chart 15 illustrates the impact this might have by comparing the 2014 SNPP with a projection which adjusts migration outflows in the period 2005-15 as discussed above.



2.38. As the chart shows, the impact is substantial. Adjusting the migration outflows:

- **Reduces the population growth over the period 2015-34 from 21,700 to 13,000, a reduction of 40%**
- **Cuts the number of homes needed from 558 homes a year 2015-34 to 404, a reduction of 27%.**

2.39. Note also that the adjusted projection fits better with the trend from the last three censuses – which are the most reliable data points that we have.

### Conclusion on the 2014-based population estimates

2.40. The size and age distribution of the discrepancy between the rolled forward population estimate and the 2011 census-based estimate provides compelling evidence on its own that net migration has been over-estimated, most probably as a result of the under-recording of out-migration. The case becomes even stronger when it is noted that adjusting the MYE estimates of out migration in student age groups:

- produces a rolled forward population estimate that is reasonably close to the 2011 census-based estimate;

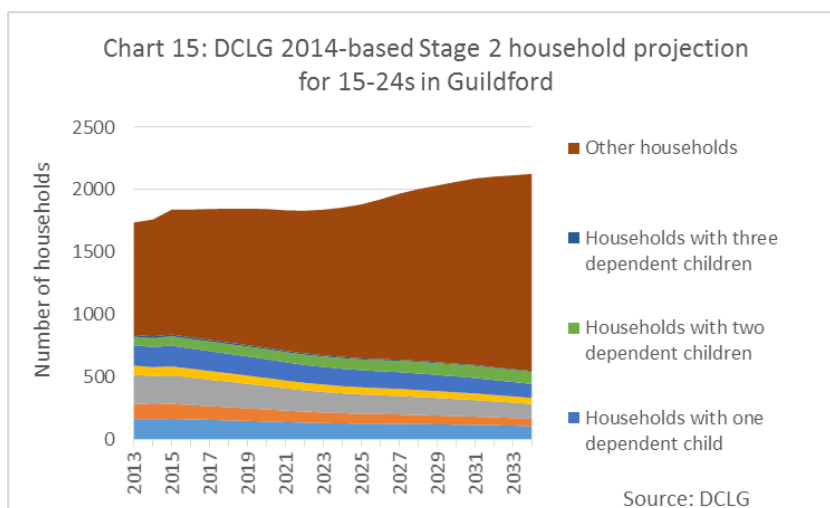
- produces an estimate of how the 18-23 population in Guildford has changed in the last ten years that fits rather better with known changes in student numbers than the 2015 MYE estimates; and,
  - results in fertility rate estimates for Guildford that are more consistent with national trends and do not fall substantially as suggested by the 2015 MYE.
- 2.41. This conclusion is in marked contrast to GL Hearn’s view (paragraph 3.40 of Guildford Addendum report) that adjusting for UPC “is not a robust alternative to the SNPP” on the grounds that “it is unclear if UPC is related to migration” and “due to changes in the methods used by ONS to measure migration ....the biggest impacts are likely to be focussed on the early part of the decade...” The evidence presented in this report indicates that errors in migration estimates are the only explanation capable of accounting for discrepancies of the size seen and that it appears more likely that they occurred or were largest in the latter part of the period between the censuses. Far from a projection which adjusts for UPC not being a robust alternative to the 2014 SNPP, the evidence suggest that using the SNPP without such adjustment is likely to give highly misleading results.
- 2.42. The impact on the official projections of adjusting the historic out-migration estimates would be substantial and could reduce the projected population increase over the period 2015-34 by as much as 40% and the projected increase in the number of households by over 25%.
- 2.43. Hence, basing projections on estimates that better model what has happened in the past, Guildford’s population in 2015 would be projected to increase by 13,000 by 2034, not by 21,700. On the same basis, the number of homes need to meet demographic need would be 404 homes a year (2015-34), not to 558.

### **3. Meeting student housing needs**

- 3.1. The Guildford Addendum takes the age group 18-23 as representing students and notes that the 2014 SNPP (on which the DCLG 2014-based projections are based) envisages very little growth in this age group over the period 2015-22. It suggests that the projected growth in the longer term is “likely to be due to a cohort effect rather than an increase in student migration” (Paragraph 7.9). It also notes that there is little change in the projected in migration of 18-23 year olds. These findings lead GL Hearn to conclude that any increase in student numbers is likely to result in an additional housing need above that suggested by a demographic analysis based on the projections. They therefore calculate the number of homes the projected increase in student numbers would require as a standalone figure. They take the increase in student numbers over the plan period as 3,800. They assume that 55% live in halls of residence, leaving 1,710 to be accommodated in the general housing stock. At 4 students per dwelling this implies a need for 428 dwellings or 23 a year over the period 2015-34.
- 3.2. The weakness in this analysis is that, having discounted the need to adjust the DCLG projections for UPC, they have not investigated how UPC has affected student age groups. As discussed above, analysis of UPC shows that there has been an overestimation of historic net migration into Guildford, almost certainly

due to an under-recording of the movement of students away from Guildford after the completion of their studies. This means that **the projections are based on historical data that assumed that households had been formed in Guildford by students who had in fact left the district. As a consequence the projections assume that households will continue to be formed in Guildford by people who will have left.**

- 3.3. In addition GL Hearn do not take into account the way in which the DCLG projections are constructed, nor do they look at what the projections say about the number of households formed in the age group which includes most students. The key points are:
- The DCLG projections assume that the number of people in ‘institutional accommodation’, which includes student halls of residence, remains constant in the under 75 age groups at the number assumed at the beginning of the projections. This means that **all of the growth in student age groups envisaged by the 2014 SNPP will have been assumed by DCLG to translate into an increase in the population living in the general housing stock: there will have been no assumption about 55% being accommodated in halls of residence.** Accordingly, the projected increase in those aged 18-23 over the period 2015-34 (2753 people) will have resulted in the projections assuming that an additional 2753 people will be living in ordinary housing in 2034. That compares with GL Hearn’s estimate that there is a need to accommodate 1,710 additional students in the general housing stock.
  - The high proportion of students in the Guildford population aged 18-23 will have affected the historic household formation rates of the age group of which they are part – the 15-24 age group in the ‘Stage 2’ DCLG projections. That effect will be carried forward into the projections. This means that even if some of the increase in the 15-24 age group is non-students the number of households formed will have been calculated on the basis that the proportion of students in the population has not changed.
- 3.4. These two factors, plus the fact that the projections will assume that some students who will have left Guildford are still in the district, probably account for the substantial rise in the projected number of households in the age group 15-24. See Chart 15.



- 3.5. As the chart shows, the projection for 15-24s is dominated by the increasing number of ‘other’ households, which is the household type to which most student households will belong. The number of ‘other’ households increases from 1001 in 2015 to 1580 in 2034 i.e. by 579 households. This compares with the 428 extra dwellings that are needed for students. **It would therefore appear that, even allowing for an improbably high increase in the number of non-student ‘other’ households, the DCLG 2014 projections provide more than enough extra homes for students.**

### Conclusions on meeting the needs of students

- 3.6. This analysis demonstrates that the DCLG projections do not support the GL Hearn contention that it is necessary to allow for additional student homes above the number suggested by a demographic analysis based on the DCLG household projections. It is not, however, a full replacement analysis. A proper analysis needs to separate student needs from general housing needs. General housing needs should be estimated by adjusting the DCLG projections to remove the impact of students and correcting for UPC and the under-estimation of out migration. Student housing needs should be estimate based on a fuller analysis of the accommodation choices that students are making now and an assessment of how this may change with an increase in student numbers and planned increases in provision on educational sites. At the same time, having adjusted the DCLG projections to remove the impact of students, a more reliable picture of the likely growth in non-student households should emerge as it is likely that the inclusion of students in the statistical base used for the projections will have distorted the estimates made of the likely growth in non-student households.
- 3.7. The assumptions made about the proportion of students who live in halls of residence and the extent to which students will occupy an increasing number of houses in the cheaper areas of Guildford are critical. NMSS suggest that neither should be estimated simply on the basis of past trends and the current position. Given the impact which ‘studentification’ can have on neighbourhoods, there is a strong case for the Council developing a student housing policy with the University of Surrey and other institutions which attract students to the district. This should balance the aspirations of the university; the needs and wishes of

students; and the impact on residents in and near areas in which significant numbers of students live. A key output from this should agreement on the need for additional halls of residence (with the land use implications they have) and a separate target for the number of additional students who should be accommodated in the general housing stock.

## 4. Supporting Economic Growth

4.1. The approach used by GL Hearn to estimate the number of homes needed to support economic growth is based on the following steps:

- Economic forecasts have been obtained from Oxford Economics (OE), Cambridge Econometrics (CE) and Experian. These forecast that the number of jobs in Guildford will increase by between 0.5% and 0.9% a year.
- The average annual growth rate from these three projections is then applied to an estimate of the number of jobs in 2015 produced by AECOM by adjusting BRES data. This leads to the conclusion that there will be an additional 12,893 jobs between 2015 and 2034, which is rounded to 12,900.
- To estimate the number of economically active people in Guildford GL Hearn use three different scenarios. These draw on economic activity rates from the Office for Budget Responsibility (OBR), Experian and assumptions from the 2015 West Surrey SHMA. They do not appear to have used the rates produced by OE which they say show some of the highest participation rates. The decision to draw upon the lower, but not the higher, end of the spectrum of estimates of participation rates is notable and leads to a higher estimate of housing needed to support economic growth.
- Different assumptions about unemployment rates are made in the different modelling scenarios.
- It is assumed that 4.3% are 'double jobbers' i.e. they have more than one job. GL Hearn acknowledge that this assumption is "potentially conservative given that there is some upward trend shown in the historical data" (Paragraph 4.24).
- Using these assumptions GL Hearn adjust migration flows to estimate the number of dwellings needed to support a population that is just equal to that required to support the forecast increase in jobs. The number varies from 555 to 584 homes a year depending on which economic activity rate/unemployment scenario is chosen. They choose the middle result (579 homes a year), "given the significant extent to which the Experian assumptions are reliant on increasing numbers of older people in work" (Paragraph 4.32).

4.2. There is a fundamental flaw in the approach adopted by GL Hearn. Economic forecasts such as those produced by CE, OE and Experian depend crucially on the assumptions they make about how economic activity rates will change. Had they made different assumptions they would have projected a different sized workforce and reached different conclusions about the number of jobs in the

economy. An attempt to work out from a jobs forecast how many people need to live in an area will only produce a meaningful answer if the economic activity rates implicit in the forecast are used. GL Hearn average three different jobs forecasts from three different sources each of which uses different economic activity rate assumptions. They then apply economic activity rates from other sources to the averaged jobs forecast. They are not applying economic activity rates consistent with the forecast being used: the results are therefore unreliable. To avoid this GL Hearn should have used economic activity rate and employment assumptions consistent with each forecast to calculate the change in population needed to support that view of the increase in jobs. That would have produced three different views of the population change needed and hence the number of homes required. Only when the three estimates have been obtained, each consistent with the forecast it is based on, should the results have been averaged to produce a single figure estimate of the number of homes needed to support economic growth.

- 4.3. Unfortunately, the mistake made by GL Hearn is a not uncommon one. For this reason NMSS have worked with Cristina Howick (Peter Brett Associates and the author of the PAS Technical Note on OANs) to produce a note explaining why the housing implications of jobs forecast should only be calculated using consistent economic activity rates assumptions. This is available at [http://atlas.cambridgeshire.gov.uk/EEFM/EEFM\\_OAN-Note\\_13-04-2017.pdf](http://atlas.cambridgeshire.gov.uk/EEFM/EEFM_OAN-Note_13-04-2017.pdf). It includes a worked example which demonstrates how large an error can be introduced if economic activity rates that are different from those implicit in a jobs forecast are used. The note has been prepared in the specific context of using the East of England Forecasting Model (EEFM) but the principles are equally applicable to the forecasts produced by CE, OE and Experian. The note has been agreed by Cambridge Econometrics who operate the EEFM.
- 4.4. Given that a flawed approach has been used and the Addendum Report does not contain sufficient detail of the forecasts used to enable the analysis to be re-worked, there is little more that can usefully be said. However, the following points might be noted and should be taken into account in the re-working of the analysis.
- GL Hearn note that the forecasts they have used have job growth that ranges from 0.5% to 0.9% a year with an average of 0.7%. This means that the highest forecast is some 80% higher than the lowest. This should set alarm bells ringing. Such a wide range indicates considerable uncertainty in the forecasts. As such, they should be used with very great caution. Ideally, each of the forecasts should be reviewed for plausibility against all of the available local evidence and adjustments made as necessary.
  - GL Hearn have not used the OE economic activity rates which they to consider to be too high. This will have distorted their analysis further. Had they used a higher set of economic activity rates they would have suggested a smaller number of homes were needed. Alternatively, if OE were to modify their modelling to reflect economic activity rates that GL Hearn regard to be reasonable, they would have produced a different and probably lower jobs forecast. Of course, had GL Hearn estimated the homes needed



to support the OE forecast using OE economic activity rates this issue would not have arisen.

- As already noted, GL Hearn discount the housing need figure produced using Experian economic activity rates “as they are reliant on increasing numbers of older persons in work”. The same issue arises here. GL Hearn either need to accept the Experian forecast and estimate its housing consequences using Experian’s economic activity rates or they need to discount the forecast entirely (or, possibly, commission Experian to produce a forecast using economic activity rates which they consider acceptable).
- GL Hearn acknowledge that the double jobbing rate used in the SHMA Addendum may be conservative. Had they used a higher rate (reflecting the rising trend in double jobbing) they would have concluded that fewer homes were needed to support economic growth.

### **Conclusions on homes to support economic growth**

- 4.5. The only conclusion that can be reached on the homes needed to support economic growth is that the analysis needs to be re-worked using assumptions consistent with the forecasts to estimate the homes implications of each. It should be noted that GL Hearn was advised of this error in approach by NMSS in the previous consultation, which begs the question why this error has been repeated in the revised SHMA.

## **5. Affordability**

- 5.1. The earlier NMSS report showed that Guildford did not stand out from other Surrey districts in terms of affordability. It is a highly desirable place to live being surrounded by very attractive countryside yet with both a strong local employment base and good commuter links to London. Increasing housing supply beyond the numbers suggested by the demographic analysis would not have a noticeable impact on house prices: it would simply attract more people to live in the area.

## **6. Conclusions**

- 6.1. This review has uncovered some major issues. Most notably, it is clear that the historic data for Guildford between the 2001 and 2011 census significantly over-estimates net migration into Guildford in student age groups, most probably as a result of the under-recording of migration out of Guildford.
- 6.2. It seems probable that the under-recording of out migration has continued after 2011. This has major implications. In particular, the ONS’s 2015 population estimate for Guildford may over-estimate the district’s population and DCLG’s 2014-based population projection may overstate the likely increase in housing

by a substantial margin. An alternative calculation making plausible adjustments to the estimated outflows in the period 2001-15 would reduce the demographically-based estimate of the number of homes needed from 558 homes a year 2015-34 to 404.

- 6.3. An examination of the DCLG projections for the growth of households of the type and age formed by students renting in the general housing stock in Guildford suggests, contrary to GL Hearn's conclusion, that those projections included more than enough additional housing to meet the projected growth in the student population. However, there is a need for a fuller analysis which separates out student housing needs from other housing needs as the DCLG household projection methodology is not suited to estimating the future housing needs of student and the inclusion of students in the statistical base used for the those projections may have distorted the projections made for non-student housing.
- 6.4. The GL Hearn estimates of the number of homes needed to support economic growth are flawed as they use economic activity rates which are different from those used in the job forecasts on which they have based their estimates. This produces results which cannot be relied on as, had the forecasters in question used the economic activity rate assumptions employed by GL Hearn, they would have produced different jobs forecasts, not the ones on which GL Hearn have based their analysis. The SHMA Addendum does not provide sufficient detail of the jobs forecasts for others to re-work the estimates of the homes needed to support economic growth so the only option is to invite GL Hearn to redo the analysis.
- 6.5. Estimating population and household growth in university towns is notoriously difficult. This review has shown that this is very much true of Guildford and that attempting to estimate the district's housing needs using the DCLG projections with little or no adjustment has introduced large errors. Considerable further work is needed before there will be a sound basis on which to estimate Guildford's objectively assessed need for housing.

NMSS

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