

Note for Inspector: The Council's response to Barton Willmore's (ID 3557665) approach to determining the Housing Requirement for South Gloucestershire EIP Reference CE7

1. At the Matter 8 Hearing Session (20 June 2012), South Gloucestershire agreed to prepare a short note regarding the assumptions underpinning the Chelmer Model as presented in evidence submitted by Barton Willmore and the approach taken by the Council in deriving a household projection from the latest ONS population projections (the 2010-based sub-national population projections). The Inspector will recall that Mr Mellor of Barton Willmore declined the Council's offer to prepare a Statement of Common Ground (SOCG) citing that Chelmer is a long established and technically well regarded model and therefore there would be nothing to be gained from this.
2. The position taken by Barton Willmore is regrettable and is based on a misunderstanding of the difference between a computer model and its application in a practical study. Notwithstanding this, the Council recognise that Chelmer is a well regarded model of a high technical standard. The problem is that, like any piece of software, the input of data based on different assumptions or derived from different sources can lead to the model producing very different results. It is those assumptions that the Council wished to evaluate with Barton Willmore and establish areas of agreement.
3. Given Barton Willmore's unwillingness to co-operate in drafting a SOCG, it is difficult for the Council to comment in detail on the specific assumptions which underpin their model. The critical issue however, is that Barton Willmore's version of the Chelmer model does not incorporate the most up-to date ONS population projections (the 2010-based Sub-National Population Projections (SNPPs); a position that has been confirmed by Barton Willmore (Appendix A).
4. Instead, Barton Willmore's version of the Chelmer model is primarily based on the out-of-date ONS 2008-based population projections and the CLG 2008-based household projections, with adjustments made to account for different migration and economic led assumptions.
5. This is material because the ONS 2010-based population projections for South Gloucestershire are some 16,000 lower at the end of the plan period (2027) than their 2008-based predecessors. This position was explained by the Council at Matter 8. The Council also explained that because the ONS population projections are *the* primary driver of the CLG household projections (as confirmed by Appendix B) it stands to reason that, given the magnitude of the differences between the two sub-national population projections, the 2010 CLG household projections, when they are eventually published, will also be considerably lower than the 2008 based household projections.
6. It is also important to note that the ONS 2010-based SNPPs incorporate up-dated and more robust migration estimates than their 2008-based predecessors. This is because they incorporate data from the ONS' ongoing Migration Statistics Improvement Programme (MSIP)¹. This latest migration data is not incorporated in the 2008 SNPP, therefore it is not completely incorporated into the version of the Chelmer model used by Barton Willmore. The Council considers this is materially significant as it goes to the heart of the Council's case. Whilst the Council recognise the validity of the Chelmer model per se, its value in supporting an objectively assessed understanding of the housing needs of the District is only as robust as the primary data that is fed into the model. Or put simply, using the wrong information gives the wrong results.

¹ The ONS Migration Statistics Improvement Programme (MSIP) is an ongoing programme of improvements which ONS make to their estimation methodologies to ensure that the most accurate data on migration (internal and international) is used in their population estimates and sub-national population projections.

Summary of the Council's approach (25,100 new households 2006-27)

7. In the absence of updated CLG household projections, the Council has produced a full set of household projections using the ONS 2010-based SNPPs and the Household Representative Rates (HHRs) from the 2008 CLG household projections. This is the standard methodology for deriving a household projection from a population projection and is the principle that underpins the CLG household projection methodology.
8. This standard methodology generates a projection of 25,100 new households over the period (2006-2027). Indeed we also note this figure has been independently verified by Roger Tym & Partners who explained at the Hearing Session that they had carried out a detailed modelled assessment of the housing requirement (Examination Library ref: RE12 para 18).

Barton Willmore's Demographic led approach (c28,300 dwellings 2006-07)

9. Barton Willmore has used the Chelmer model to generate an alternative migration-led projection of +1,000 net migrants per year based on trends in historic ONS mid-year population estimates. However, it should be noted that this level of net migration is higher than the migration assumptions in the most up-to date 2010 SNPPs – which incorporate the improved migration data arising from the ONS MSIP programme (para 6) - an average of +900 net migrants per year over the plan period. The cumulative impact of these higher migration assumptions in Barton Willmore's model, over the course of plan period, will be considerable.
10. Given the fact that both the Council and Roger Tym & Partners have independently arrived at a projection of around 25,000 new households using the most up to date official ONS population projections, it would be reasonable to suggest that *if* Barton Willmore were to incorporate the most up-to date ONS population projections into their version of the Chelmer model, a similar household projection would be generated.

Reliance on the 2008 CLG Household Projections (c33,000 new households 2006-27) and the Torbay Appeal

11. At the Matter 8 Hearing Session, when presented with the additional evidence from Roger Tym & Partners, Barton Willmore appeared to back-track from their reliance on their demographic led projections generated by the Chelmer model, suggesting instead that the 2008 CLG household projections (i.e. 33,000 new household over the plan period) should form the basis of the Council's Core Strategy housing requirement. This was supported by reference to a recent Appeal decision in Torbay (APP/X1165/A/11/2165846).
12. The Council has undertaken a detailed review of the Torbay Appeal decision and has concluded that it should have no bearing on this Core Strategy Examination because:
 - i) The Appeal Inspector's decision was made in a very different context at a S78 appeal hearing. This is acknowledged in Para. 47 of the decision where the Inspector states:
"...it is important to bear in mind that I have neither the remit, nor sufficient evidence to forestall [the Core Strategy process] by attempting to identify, conclusively, the future housing needs of Torbay"

This is clearly not the case in this Core Strategy EiP where the Inspector has both the remit and access to the evidence to make such a judgement.

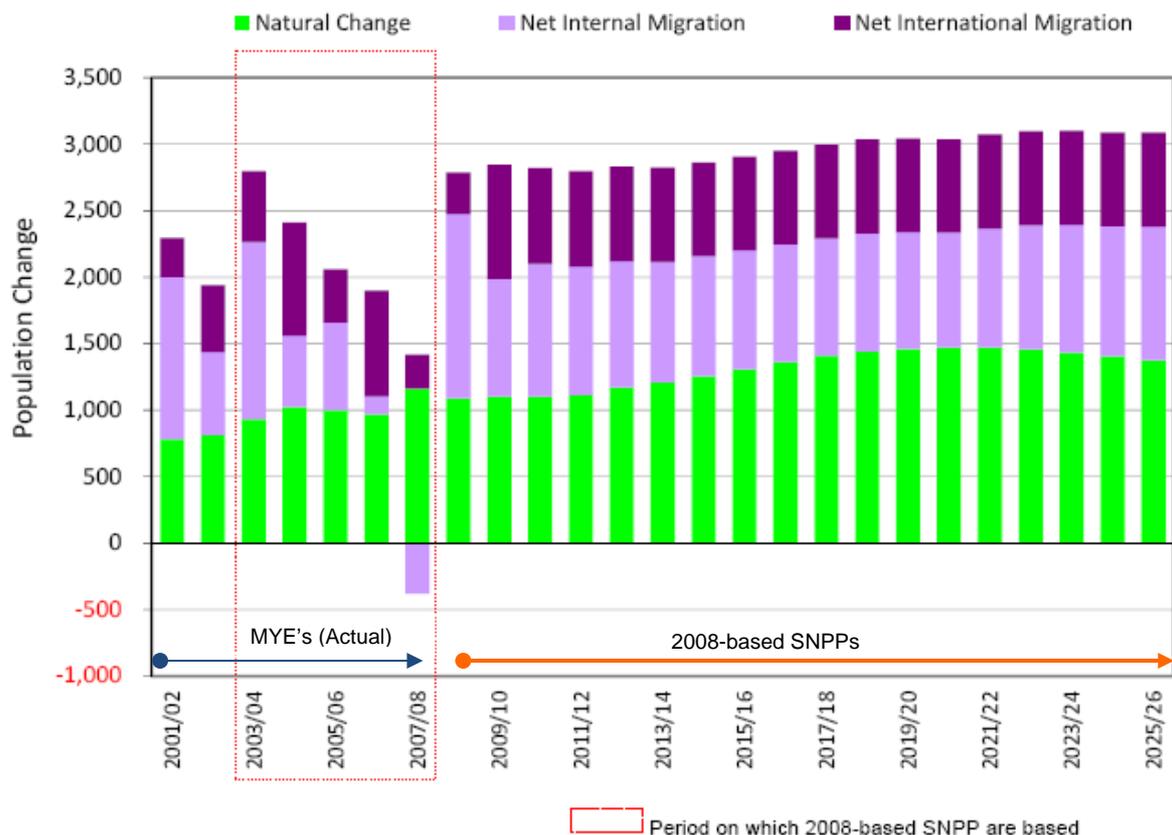
- ii) The methodological approaches taken by South Gloucestershire and Torbay Councils in translating the latest ONS population projections into a household projection are vastly different. The ONS 2010-based population projections were published during the S78 Appeal hearings and Torbay Council has confirmed that they did not have the opportunity to analyse them in detail. Instead they simply asserted that, because the population projections were lower, the next set of CLG Household projections would also be lower. In contrast, South Gloucestershire Council has undertaken a full set of household projections using the ONS 2010-based SNPPs and the HRRs from the latest CLG household projections – which is the recognised standard approach (as set out in para 7&8 above).

13. In summary therefore the Torbay Appeal decision is not relevant to this Core Strategy Examination because it ignores the NPPF requirement for using up-to date information as well as applying an appeal Inspectors reasoning made in a very different context.

Why are the 2008 CLG household projections not a suitable basis for South Gloucestershire's Core Strategy housing requirement?

- 14. At this point it is important to remind the Inspector of the work the Council and Independent demographic expert (Dr. Peter Bowden of Edge Analytics) undertook to scrutinise the ONS 2008-based SNPPs; *the* primary driver of the CLG 2008 household projections (PS8: paras 5.7-5.20 & Appendix 2, PSM8: Appendix A).
- 15. To recap; the ONS' Sub-National Population Projections are based on trends in births, deaths and migration in the ONS mid-year population estimates (MYE) in the preceding five year period. However, scrutiny by independent consultants of the 2008-based SNPPs for South Gloucestershire as out in PS8 reveals that they do not follow the trends in the mid-year estimates on which they are based. In South Gloucestershire's case, population growth (illustrated in the MYEs) dramatically slows over the period 2003/04-2007/08, but the 2008-based SNPPs project population growth at a much higher and consistent rate as clearly illustrated in the graph below (Fig 4 Appendix 2, pg 13 of SP8).

Fig 4: Components of change, sub-national population projection (2008-based) for South Gloucestershire (Source:ONS)



16. As explained above, independent demographic experts have also scrutinised this data, concluding that the Council would have good justification for challenging the ONS on their 2008-based projections as, from a ‘common sense perspective’, it is difficult to see how the long-term assumptions (on migration) for the district were defined based upon the historical evidence that is available.

17. Critically therefore, because the 2008-SNPPs -the primary driver of the CLG 2008 household projections are too high, it stands to reason that the 2008 CLG household projections will also be too high. A position that has since been confirmed by the recently published ONS 2010-based SNPPs and the subsequent household projections produced by both the Council and Roger Tym & Partners (c.25,000) using this up-to date and more plausible official population projection.

18. Finally, it is also important to note that, on their own evidence, by publishing their own alternative migration led household projection (c.28,300 new dwellings by 2027 as referenced at Appendix 1 of Barton Willmore Matter Statement 8), Barton Willmore acknowledge that the 2008 CLG household projection for South Gloucestershire is too high. Assuming 28,300 is the correct figure (which the council does not accept) – the Council notes that, as set out in the Housing Options Paper (Examination Library ref: CE8) as a result of amendments to Policy CS15 the Plan now makes provision for some 26,855 dwellings with additional flexibility. This is considered not materially out of step with the demographic led trend based evidence prepared by Barton Willmore.

Barton Willmore’s Economic Led Projection (c.35,100 dwellings)

19. The Council does not accept that Barton Willmore’s “economic led scenario” is an appropriate way of establishing an objectively assessed housing requirement in South

Gloucestershire. The Chelmer economic led scenario is based on the assumption that the projected total additional jobs identified in the Core Strategy evidence base (18,600-21,900) will all be required by residents of South Gloucestershire. It therefore seeks to identify the level of net in-migration from 2006 onwards that would be necessary to achieve a growth in labour force consistent with the employment growth aspirations of the Council. The Council's objection to this approach is twofold. Firstly it is based on a false understanding of the role of South Gloucestershire in providing jobs for the wider sub-region and secondly the model relies on a series of statistical assumptions and its results are therefore unstable and unreliable.

20. The strategic role of South Gloucestershire in providing employment for the wider sub-region and in particular for residents of Bristol is recognised by the LEP and in representations to the Core Strategy EIP by Bristol City Council and Business West. It should be noted that it was confirmed in the Matter 10 session on 21st June that the issue of lack of housing supply in South Gloucestershire being a potential brake on economic growth has not been raised in representations from, individual businesses or business organisations. Further, the supply of employment land identified in the Core Strategy is more than sufficient to meet the expected growth in jobs and needs of businesses identified in the Council's evidence base and is sufficient to accommodate higher levels of employment growth if required (Examination Library ref: PSM10).
21. The Chelmer employment led projection, nonetheless, is based on the assumption that the projected total additional jobs identified in the Core Strategy evidence base (18,600-21,900) will all be required by residents of South Gloucestershire. In his evidence, Mr Mellor justified this on the grounds that, from the 2001 Census commuting data, there was a close balance between the numbers commuting into South Gloucestershire and those commuting out. On the surface this seems to be a fair assumption. Indeed we can confirm that in 2001, 52,000 (41%) of the 127,500 economically active residents worked outside the district and no fewer than 36,400 (29% of total economically active) of these worked in Bristol. However, Barton Willmore's approach ignores the important role played by South Gloucestershire in the sub regional economy and the commuting balance is unlikely to be as stable, or as clear cut, as those of a free-standing urban area separated by some distance from other major centres.
22. The Council's evidence paper EB21/1 Table 2 (pg 25) has shown indications of an increasing reliance on job provision in South Gloucestershire on the part of the city of Bristol which has dramatically increased its economically active population since 2004 (from 210,300 Jan- Dec 2004 to 252,200 in Oct 2010 - Sept 2011).² At the same time economically active numbers in South Gloucestershire showed a rise from 135,000 in 2004 to 141,400 in 2008 before falling to 136,200 in 2011. By way of contrast, local jobs data from ONS indicates that employee jobs in S Glos rose from 114,800 in 2001 to 141,600 in 2009 (SGC paper EB21/1 Table 1 pg22)³ while total employee jobs in Bristol fell from 237,100 in 2001 to 233,500 in 2009. The signs are therefore that Bristol residents have become more dependent on employment in S Glos since 2001. In addition to this, EB21/1 Table 4 (pg 26) shows that unemployment numbers have increased sharply in both South Gloucestershire and Bristol, the period 2007/08 to 2010/11 showed a combined increase of 11,000 unemployed.
23. It is clear that South Gloucestershire plays an important part in providing jobs for the sub-region and in particular Bristol and is so integrated into the wider sub-regional economy that it is inappropriate to assume that all local jobs could or should be taken up by local residents.

² ONS NOMIS data. 2004 is the earliest date in the series available from the NOMIS website.

³ ONS ABI/BRES data.

Economic led Scenario Chelmer Model Methodology

24. The Chelmer employment led projection, however, is based on the assumption that the projected total additional jobs will **all** be required by South Gloucestershire residents. The method is to take any shortfall in the projected number of economically active local residents and 'top them up' with sufficient net migrants to provide enough workers. This involves making a number of assumptions including the age structure of the migrants – and as it is a net change figure – this involves further assumptions about the respective age structures of the much larger inward and outward migration streams.
25. The last step of the process involves applying a set of projected Household Representative Rates (HRRs) to the whole population, including migrants to give the final housing total. As always, slight differences in the HRRs being applied to the whole population can produce quite large percentage shifts in the additional housing number required. Adding this source of variation to migration related assumptions together with the uncertainties that surround the employment growth projection for the district creates an interesting artefact that can be used for scenario testing but not relied on with any confidence as a realistic forecast of household need. The results of the employment led model therefore have very little, if any, relevance to, and provide very little, if any, help on, the level of housing growth required in South Gloucestershire.

Conclusion

26. The Council agrees that the Chelmer model is one of the recognised and robust methods for determining trend based housing need. However we disagree with how it has been used to provide Barton Willmore's alternative housing requirement for South Gloucestershire. This is because it does not incorporate the most up to date and reliable ONS sub-national population projections (the 2010- based SNPPs) which demonstrate a significantly lower rate of population growth than their 2008-based predecessors.
27. The Council has put forward sound evidence that shows that the 2008 SNPPs for South Gloucestershire cannot be relied upon because they are at odds with trends in the ONS mid year population estimates on which they are based as set out at PS8. Consequently therefore the 2008 CLG household projections are too high. This position has since been confirmed by the up-dated and more accurate ONS 2010-based SNPPs and their subsequent translation into a household projection of 25,100 – as set out at PSM8. Moreover, this figure has also been independently verified by Roger Tym & Partners as set out in RE12.
28. On Barton Willmore's own evidence, by publishing their own alternative migration led household projection (c.28,300 new dwellings by 2027), they acknowledge that the 2008 CLG household projection for South Gloucestershire is likely to be too high.
29. In calculating its household projection of 25,100, the Council has undertaken a full household projection using the latest ONS population projections and the trends (Household Representative Rates) in the latest CLG household projections. This is a standard methodological approach, which - unlike the approach taken by Barton Willmore - is in accordance with paragraphs 158 and 159 of the NPPF.
30. Finally, the Council do not agree with the methodology of Barton Willmore's economic led projection because it assumes that all new jobs will be taken up by resident workers –

and clearly ignores the strategic role of South Gloucestershire in providing employment for the wider sub-region and in particular for residents of Bristol. The model based evidence presented by Barton Willmore to this EIP therefore does not represent robust justification for an alternative housing requirement of c.28,000-35,000 dwellings.

Appendix A – Email confirmation from Barton Willmore regarding 2010-based SNPPs

Dear Mr Cornelius,

I write further to your recent email to my colleague Ian Mellor, and specifically your query relating to paragraph 4.4 (pg 8) of Appendix 1 of our recently submitted response to Matter 8 (Housing Provision) on the South Gloucestershire Council Core Strategy.

The 2010-based sub national population projections (SNPP) were not available at the time the Chelmer model base data files were being prepared by Cambridge Econometrics (the owner of the model), and as such the model data includes only 2008-based SNPP.

However, the SNPP data is not used in the modelling exercise, and is simply presented as accompanying data. As such, the fact that it is not included within the Chelmer model dataset has no bearing on the results of the forecasts. Both Chelmer scenarios included within our representations, are constrained to net migration figures, and the modelling exercise flows from this. The Chelmer model does however draw from the 2010-based national population projections, as it makes use of international migration assumptions as well as fertility and mortality rates by age/ gender (adjusted to reflect local differences).

I think it is important to note that the 2010-based SNPP are of limited use in a housing requirement exercise at the present time, as the associated household projections have yet to be published by CLG, and it is these projections that provide the latest household formation rates. For the time being the latest household formation rates, are those included within the 2008-based CLG household projections, and it is these that are included within the Chelmer model. The forecasting component of the Chelmer Model is therefore based on the most up to date data available.

It is also important to understand the purpose of the Chelmer model, which is to test the necessary level of housing growth required to meet demographic change and economic growth requirements, rather than simply replicate and take at face value the 2010-based ONS sub national population projections.

I trust this assists, and I would be grateful if you could confirm receipt of this email.

Regards

Simon Macklen
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From: Andy Cornelius [mailto:Andy.Cornelius@southglos.gov.uk]
Sent: 30 May 2012 10:15 am
To: Ian Mellor
Cc: Patrick Conroy
Subject: South Gloucestershire Council Core Strategy Point of Clarification re. Matter 8

Dear Mr Mellor,

I would be grateful if you would clarify a point of methodology relating to your 'Chelmer - Open House Toolkit'.

Paragraph 4.4 (pg 8) of Appendix 1 of your recently submitted response to Matter 8 (Housing Provision) on the South Gloucestershire Council Core Strategy states:

4.4 The underlying data sets used in the Chelmer Model are derived from the latest data releases, and include:

- *mid year population estimates to 2010 (published by ONS);*
- *2008-based sub-national population projections (published by ONS);*
- *2008-based household projections (published by Department of Communities and Local Government);*
- *2008-based national population projections and earlier versions (published by ONS, and previously by the Government Actuary's Department); and*
- *Internal migration estimates by local authority to 2010 (published by ONS).*

From this description it appears that your model does not incorporate the ONS 2010-based sub-national population projections (published 21 March 2012). I would be grateful therefore if you would confirm whether or not this is the case.

If I have not heard from you by Friday 1 June we will assume that the ONS 2010-based sub-national population projections are not a component of the model.

Yours sincerely

Andy Cornelius

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Appendix B: Extract from CLG 2008 Household projection Webpage – which confirms that ONS 2008-based SNPPs are the main components of the CLG household projections

Definition of a household

In the 2001 Census, for the household projections and mid year estimates a household is defined as:

- one person living alone, or
- a group of people living at the same address who share common housekeeping or a living room

Projections of the number of households

The household figures for England, the English regions and local authority districts are derived by the Department for Communities and Local Government from the household projections model using population figures from the Office for National Statistics (ONS):

- (a) up to 2008 they are derived using the ONS mid-year population estimates
- (b) for 2009 onwards the 2008-based household projections are based on the ONS 2008-based population projections

The ONS population figures are split by marital status using the ONS marital status projections, and an estimate of the communal establishment population is subtracted from the total population to give the private household population.

These population figures, split by age, sex and marital status group, are multiplied by the projected 'household representative rates' that represent the proportion of the population in that category who are household representatives. These rates are based on the 1971, 1981, 1991 and 2001 censuses and Labour Force Survey data.

The breakdown of the household projections into the detailed household types is given by a projection of headship rates from the 1991 and 2001 census.

Figures for the number of households from the Census year of 2001 to the base year of the projections in 2008 are derived from projected household representative rates applied to the ONS mid-year population estimates. They are therefore not direct estimates of the actual number of households as they are derived from modelled household representative rates.

A more detailed description of the projection methodology is available in [Updating the Department for Communities and Local Government's household projections to a 2008 base: Methodology](#) (published 26 November 2010).

<http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/householdestimates/notesdefinitions/>