Solihull Strategic Housing Market Assessment
Final report

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November 2016

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Project Ref 36776

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Revision	Date	Description	Prepared	Reviewed	Approved
A	4.5.16	Draft for client review	JN/CMH	CMH/RJP	RJP
B	8.8.16	Draft for client review	CMH	RJP	CH
C	20.9.16	Draft for client review	CMH	RJP	CH
D	17.11.16	Final draft for client review	CMH	CMH	CH
E	23.11.16	Final	CMH	CMH	CH

THIS REPORT IS FORMATTED FOR DOUBLE-SIDED PRINTING.

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1 INTRODUCTION

Study overview

1.1 This study was commissioned by Solihull Metropolitan Borough Council to provide an objective assessment of housing need for Solihull for the plan period to 2033. This study will help inform the housing target in the forthcoming Local Plan as required by national planning policy.

1.2 The National Planning Policy Framework (NPPF) advises that, where housing market areas (HMAs) straddle local authority areas, housing needs assessments should cover these wider areas rather than individual local authorities. Solihull lies within the Greater Birmingham HMA which was defined through a series of studies undertaken by PBA[1].

1.3 In this study we do not revisit the definition of the HMA but build on that work to provide an objective assessment of housing need for Solihull.

1.4 The report is structured as follows:

- Section 2 sets out the policy and evidence base background in which this study has been prepared.
- Section 3 establishes the demographic starting point with reference to the evidence base background, the latest CLG projections and alternative trend-based scenarios.
- Section 4 reviews evidence on past housing provision, market signals and affordable housing to establish whether a market signals uplift to the demographic starting point is required.
- Section 5 considers the alignment of housing and future jobs, including considering an employment-led scenario.
- Section 6 draws out the key findings from the Part 2 of the SHMA which focuses on the calculation of the level of affordable housing need and the size and tenure of all dwellings within the OAN.
- Section 7 summarises our findings and discusses how the Council might translate the assessed need into housing targets for the Local Plan.

[1] The geography of the HMA was endorsed in the examination of the Birmingham Development Plan (Inspector's report footnote 8 and Inspector's interim findings paragraphs 8 and 9.

2 POLICY BACKGROUND AND EVIDENCE BASE

Policy background

2.1 The development plan for Solihull comprises the Local Plan (2013); however, following a legal challenge, the overall housing requirement set out within the adopted plan is treated as unadopted.

2.2 The withdrawn sections of the Local Plan included a requirement of 11,000 homes over the period 2006 to 2028 (500 dpa). This was based on the 2009 revisions to the revoked West Midlands Regional Spatial Strategy which the Court of Appeal judgment held did not constitute a full objectively assessed needs as required by the NPPF.

2.3 This legal challenge was in large part a reflection of the timing that the Local Plan was being developed in that it had been prepared in the context of PPS3 and was therefore in its advanced stages when the NPPF was published and the now-established method for identifying an OAN was in its very early stages.

2.4 The Council are therefore undertaking a review of the Local Plan. A Scope, Issues and Options Consultation document on the Local Plan Review was published in November 2015 for comment. Much of the content of this document are not relevant to this study because they are 'policy on' in their nature.

Greater Birmingham and Solihull LEP Strategic Housing Needs Study

2.5 This study has been prepared in the context of the recent Strategic Housing Needs Studies (SHNS) prepared by PBA on behalf of the Greater Birmingham and Solihull Local Enterprise Partnership (GBSLEP) and wider authorities[2].

2.6 This SHNS is perhaps one the most complex strategic housing studies undertaken to date. It was commissioned very soon after the publication of the Planning Policy Guidance Note and needed to start from first principles. Most obviously this included identifying the correct housing market, because before the publication of the NPPF and the PPG there was only a limited understanding of the housing market geography in the West Midlands. A number of early OAN reports had not addressed the HMA geography and for some time a number of councils declined to accept that they formed part of, or were strongly related to, a Greater Birmingham HMA.

2.7 It took around two years before all the various constituent members of the Birmingham HMA agreed to co-operate and work jointly. The work was split into three stages of work: stock-taking, housing need and supply/capacity.

[2] http://centreofenterprise.com/wp-content/uploads/2015/09/SHNS-Phase-3.pdf

2.8 These studies form the basis for identifying strategic housing need across the HMA. The SHNS is not a full SHMA and it does not establish the OAN for each constituent authority. It does however provide a constant HMA-wide demographic starting point for Solihull (and other HMA authorities) to establish its OAN through this study. This approach was supported at the Birmingham Development Plan examination.

2.9 This section discusses those studies as they relate to Solihull.

Stage 1 (January 2014)

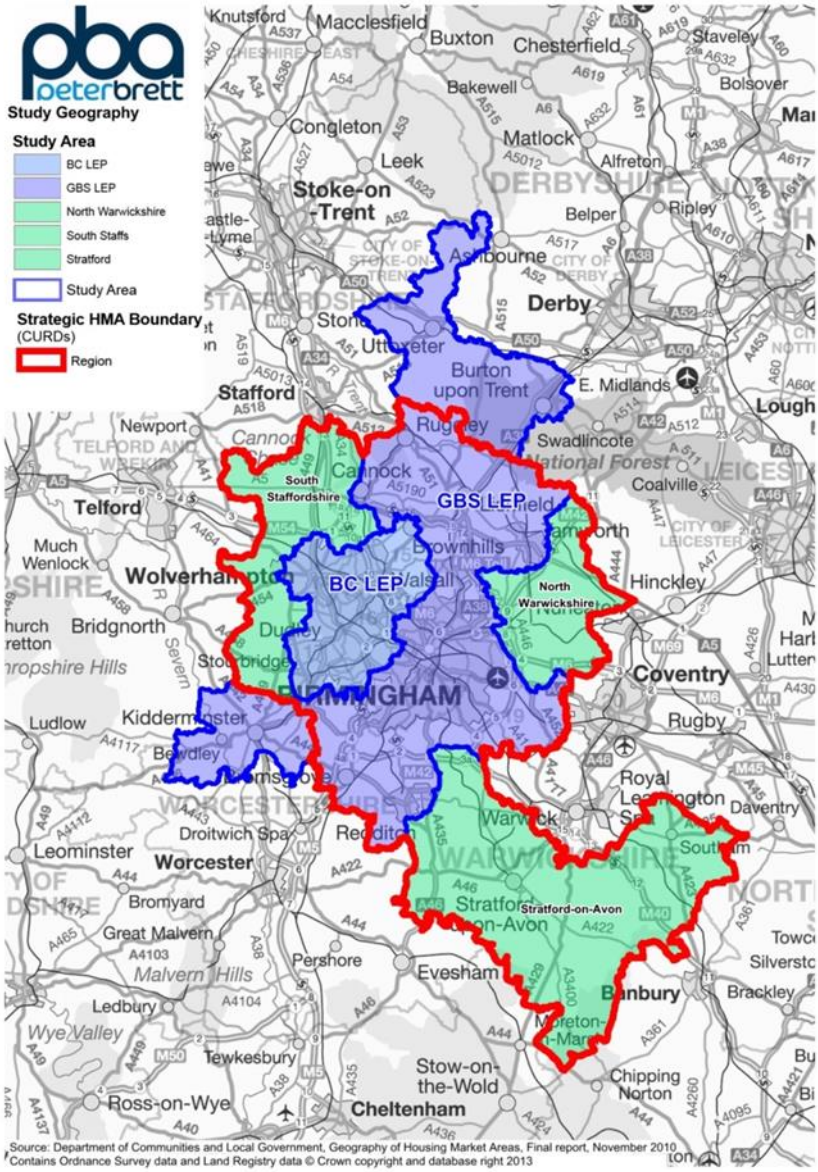
2.10 This initial stage of work comprised a stock take of the housing need and supply evidence in the GBSLEP area in order to scope out the evidence required in the subsequent stages. Three key shortcomings in the available evidence were identified:

- The need for a consistent HMA definition to be applied throughout the Greater Birmingham Area to mitigate the risk that unmet need could fall between geographical 'gaps'.
- The lack of an HMA-wide and internally consistent analysis of housing need which again was needed to mitigate the risk that unmet need could fall between any gaps.
- The need for a reassessment of the area's supply using a consistent method.

Stage 2 (November 2014)

2.11 Following the findings of the Stage 1 report, the client group expanded to include the four Black Country authorities (Dudley, Sandwell, Walsall and Wolverhampton) in order to align more closely with the Greater Birmingham HMA geography (Figure 2.1).

Figure 2.1: HMA geography



2.12 Given the shortcomings identified in the Stage 1 report, Stage 2 addressed two main matters: assessing future housing need across the sub-regional housing market area in the plan period 2011 to 2031; and comparing it with currently identified land supply. A shortfall of 27,000-61,000 dwellings was identified over the plan period based on an objectively assessed housing need for 204,000-238,000 net new dwellings.

Stage 3 (August 2015)

2.13 The Stage 3 report comprised a brief update of the main findings of the Stage 2 report but more particularly considered spatial options or scenarios for distributing the identified shortfall between the GBSLEP authorities. This stage of work focused more closely on the Greater Birmingham HMA rather than the GBSLEP and Black Country client authorities; it therefore excluded East Staffordshire which lies out with the HMA.

2.14 The update on the Stage 2 report dealt primarily with unattributable population change (UPC) and the implications of the new household projections (CLG 2012-based). Having considered these, the Stage 3 report set out an HMA-wide deficit of 37,600 dwellings over the plan period, with the vast majority of this deficit arising from Birmingham City. However, as shown below[3], Solihull also has supply deficit: 2,654 dwellings over the period of that study.

Figure 2.2: Housing need across the Greater Birmingham HMA

Net new dwellings p.a.	Projected need (ONS / PBA 2012)	Supply	Surplus (deficit)	Surplus (deficit)
Birmingham	4,450	2,529	-1,921	-38,424
Bromsgrove	297	245	-52	-1,047
Cannock Chase	299	210	-89	-1,785
Lichfield	334	459	124	2,489
Redditch	179	314	134	2,685
Solihull	608	475	-133	-2,654
Tamworth	210	235	24	488
North Warwickshire	157	203	46	911
Stratford on Avon	443	540	97	1,932
Birmingham sub-market	**6,979**	**5,209**	**-1,770**	**-35,405**
Dudley	634	821	186	3,725
Sandwell	1,298	1,041	-257	-5,148
Walsall	721	548	-173	-3,457
Wolverhampton	514	683	169	3,374
South Staffs	208	175	-33	-661
Black County sub-market	**3,375**	**3,267**	**-108**	-2,167
Total HMA	**10,355**	**8,476**	**-1,879**	**-37,572**

Source: SHNS Stage 3 Report

Other material considerations

Birmingham Development Plan

2.15 Birmingham is the main driver of housing need/demand in the HMA. The Birmingham Development Plan (BDP) is now in its final stages before it is adopted by the City Council: the Inspector's Report, which found the BDP sound, was published in March 2016.

2.16 The OAN set out in BDP was underpinned by the SHNS; in relation to the housing needs, the Inspector concluded that 'the BDP appropriately identifies housing needs

[3] Note: all numbers set out in Figure 2-2 are expressed on a per annum basis, with the exception of the green shaded column which relates to the 20-year period (2011-31).

and sets out effective measures to meet them in accordance with national policy'[4], so endorsing both the HMA geography and the HMA-wide demographic starting point referred to above.

Lowbrook Farm decision

2.17 The March 2016 Secretary of State's decision on a Section 78 appeal at Lowbrook Farm[5] endorsed the Council's position of an interim OAN of 611 dwellings per annum over the period 2011-31.

2.18 This interim OAN was, in line with the PPG, underpinned by the CLG 2012-based household projections as the demographic starting point. As set out in the Inspector's report, the Council's evidence 'tested the projection from a demographic perspective, using the findings of the Birmingham and Solihull Strategic Housing Need Study (SHNS). It concluded that the CLG projection was robust'[6]. This starting point was accepted by the Inspector; with the acknowledgement that should be treated as an interim number and that the plan target may be higher 'depending among other things on any cross-boundary unmet need'[7].

2.19 In relation to employment trends and activity rates which the Inspector notes 'may require modification and uplifting of the DCLG housing projection assessment'[8], the recommendations, which were then in turn endorsed by the Secretary of State, were that there was 'persuasive evidential support' that the Council's number of 611 withstands scrutiny.

2.20 In reaching this view, the Inspector concluded that:

> *'In summary, the evidence supports the Council's position. Therefore, there is no justification for a 'future jobs' uplift to the demographically derived housing need of 611 dpa. In line with the PPG, the final step in assessing housing need is to test the emerging number against market signals and other local factors. This analysis was provided in the Council's Appendix 1 and the appellant has not contradicted it.'*[9]

2.21 The Lowbrook Farm decision therefore confirms the relevance of the SHNS in setting the parameters within which Solihull will determine its OAN.

Summary

2.22 The SHNS confirms that Solihull forms part of the Greater Birmingham HMA. This study does not revisit that. It also establishes the demographic starting point for the HMA as a whole over the period from 2011 to 2031. As confirmed by the BDP

[4] Para. 97
[5] APP/Q4625/13/2192128
[6] Para. 51
[7] Para. 54
[8] Para. 223
[9] Para. 86

Inspector's findings and the Secretary of State at Lowbrook Farm, this is an appropriate starting point for this study.

2.23 However, it is only the starting point to establishing Solihull's OAN. Given the plan period for the Local Plan Review is intended to be 2014 to 2033, it is necessary to revisit the demographic projections to ensure that the OAN is, in line with the PPG, based on the most up-to-date projections.

2.24 Furthermore, whilst the Council have undertaken work for the Lowbrook Farm inquiry in relation to market signals and employment, these was done in the context of a Section 78 appeal and were interim in their scope. The study therefore provides a comprehensive review of both to inform the OAN.

3 THE DEMOGRAPHIC EVIDENCE

Method

3.1 In line with the PPG, the starting point of our objective assessment of housing need is the official household projections from the Department for Communities and Local Government (CLG), which are derived from the sub-national population projections (SNPP) produced by the Office for National Statistics (ONS). The SNPP show future population by local authority area and are normally released at two-year intervals, with additional releases in response to new data – recently the 2011 Census. The CLG translates the population into households. The projected growth in household numbers, with a small adjustment for vacant and second homes, is used as the measure of demographic housing need.

3.2 The official projections, like all projections, are trend-driven – that is, they roll forward (project) past trends into the future. Accordingly, still following the PPG, we test and amend them through alternative projection scenarios that adjust for:

- Technical flaws in the official modelling, including:
  - Superseded or otherwise inaccurate historical data - projections are only past trends rolled forward, so a projection based on the wrong trends will be inaccurate);
  - Anomalies in the modelling – the official models are very complex, mainly because they cover hundreds of local authorities; even if the models are accurate 'on average', they will not necessarily be accurate for every single authority in every single year.
- External (non-demographic) factors that bear on demographic change but are not captured in the projections, because they are likely to differ in the future from what they were in the past – in particular the macroeconomic climate.

3.3 For any geographical area, the change in housing numbers is the outcome of three components: The first two factors, natural change (equal to births minus deaths) and migration (UK and international[10]) impact on population change. The third factor is the ratios that turn population into households, known as household reference rates (HRRs, also known as headship rates or household formation rates). Alternative scenarios are mostly based on varying assumptions about migration and household formation. In contrast to natural change, these factors are difficult both to measure for the past and even more difficult to predict for the future.

Previous official projections

3.4 Until relatively recently, the two most recent official household projections were:

[10] 'Migration' in the present context means all moves that cross a local authority boundary, whether within the UK or internationally.

- The CLG 2008-based projections ('CLG 2008'), derived from the 2008-based SNPP population projection ('ONS 2008');
- The CLG interim 2011-based projections ('CLG 2011'), derived from the 2011 interim SNPP ('ONS 2011').

3.5 Both these projections have serious technical weaknesses. The 2008 projections are based on historical trends that by now are very old, and in many cases their predictions have been invalidated by the 2011 Census. The interim 2011 suite has a short time horizon, only covering 10 years to 2021. It also has a serious technical flaw: the historical migration, birth and death rates it is based on are pre-Census estimates, which for many places were shown by the Census to be seriously inaccurate.

3.6 A more general problem with the official projections is that future migration follows trends rolled forward from a five-year base period (for ONS 2011, that period is 2006-11)[11]. In principle, it seems doubtful to base a prediction for 20 years or longer on a past as short as five years. In this particular case, the previous five years are likely to be untypical of longer-term trends, because four of them coincide with an economic recession, and an exceptionally severe one at that. Projections based on 2012, whose reference period is 2007-12, share the same weakness.

3.7 Another weakness, specific to the 2011-based projection, is that its household formation carries the imprint of the recession. Across England the 2011 Census showed that there were substantially fewer households than previously expected and on average those households were substantially larger. The evidence suggests that this is partly a demand-side effect of the recession; when, due to falling incomes and the credit crunch, fewer people could afford their own homes. CLG 2011 carries forward this effect into the future.

The current official projections

3.8 The PPG names the 2012-based household projections as '*the most up-to-date estimate of future household growth*'[12]. However, since the last revision to the PPG, the Government has published new 2014-based population and household projections. These new projections were published during the course of this instruction.

3.9 Below, we summarise and test the 2012-based and 2014-based projections for Solihull. We continue to consider both releases for two reasons:

- Firstly, the PPG has yet to be updated to refer to the 2014 releases directly but does make reference to using the most up-to-date information.

[11] In the case of international migration, these five-year-based figures are controlled to national totals that reflect longer-term trends and expert judgement.

[12] 2a-016-20150227 25 August 2016

- Secondly, the SHNS was based on the 2012-based projections; understanding the relationship between the 2012-based projections and the latest projections is needed to ensure the demographic starting point is robust.

3.10 We first consider the SNPP, which provides the future population behind the CLG household projection, and then turn to the household projection itself.

2012-based official projections

3.11 In late May 2014, ONS produced a new, 2012-based release of the SNPP. This ('ONS 2012') is a fully-fledged population projection, which supersedes the interim ONS 2011. On 27 February 2015, this was followed by the CLG 2012-based household projection ('CLG 2012'), which translated this population into households.

3.12 In the CLG projections, future HRRs are based on rolling forward past trends for each demographic group. The base period being rolled forward in this case is very long, starting at the 1971 Census. Across England CLG 2012 shows lower HRRs, and hence fewer households and smaller housing need, than the previous full version, CLG 2008 (2011-based projections were published in between but were badged 'interim'). This is because the Census found considerably lower HRRs, and hence fewer households, than the 2008 projections expected, and CLG 2012 rolls forward this more subdued household formation into the future. Some analysts consider that these lower rates are permanent. Others maintain that they are due to the last recession and its aftermath, and household formation in the long term will return towards the higher rates projected in 2008, either fully or partially.

3.13 The issue is discussed at length in two recent academic articles, respectively by Prof Ludi Simpson[13] and by Neil MacDonald and Prof Christine Whitehead [14]. Both articles provide in depth analysis of the 2008 and 2012 projections. The first article finds that

> *'[The] causes of reduced household formation [in the 2012 projections against the 2008 ones] are varied, began before the recession, and mostly are likely to continue with or without recession.'*

3.14 The causes referred to include:

- *'a sustained increase among young people not leaving home' which began at the turn of the century and accelerated after 2008;*
- *the introduction of student fees from 1998;*
- *the increase in precarious employment, including the rapid growth of part-time work;*
- *the long-term increase in the number of childless women, ... which increased the number of smaller households, [and which] stopped and has fallen since 2000'; and*

[13] L Simpson, *Whither household projections?* in *Town and Country Planning,* December 2014, Vol 83

[14] N McDonald and C Whitehead, *New estimates of housing requirements in England, 2012 to 2037* in *'Tomorrow Series Paper 17' Town and Country Planning,* November 2015

- *the increasingly older formation of couples or families, which had increased the number of single-person households in the 1980s and 1990s, [and] has levelled out since 2001'.*

3.15 Prof Simpson concludes that some of these factors may be reversed, but the first three 'appear at the moment as fixed circumstances of the policy and economic environment'. Consequently 'we are not in a position to expect further increases in household formation rates of the same kind [as suggested in the 2008-based projections]. ... The future in the UK is likely to be a continuation of precarious household formation. It will probably be lower than once projected and carry more uncertainty...'

3.16 In the second article listed above, MacDonald and endorse these conclusions. They add that there are further factors to suggest that household formation could be even lower than the 2012 official projections show – including welfare reforms and rising student debt that had not yet occurred at the time of the 2011 Census and are not taken into account by the 2012 projections.

3.17 It is also important to note that, although the CLG 2012 shows lower HRRs than CLG 2008, it still shows improving HRRs overall. The authors show that, while rates increase for some groups and fall for others, '*there will be more 'winners' than 'losers' by a ratio of 3:1, so overall housing formation rates will improve'.* This means that, on balance, more people will have *'an increased chance of setting up their own household'.*

3.18 McDonald and Whitehead conclude that the 2012 projections:

> *'can be taken as a reasonable indication of what is likely to happen to household formation rates if recent trends continue. This is because, although economic growth might be expected to increase the household formation rate, there are both longer-term structural changes and other factors still in the pipeline (such as welfare reforms) that could offset any such increase.'*

3.19 The research quoted above reinforces the view of the PPG. At national level the headship rates shown in CLG 2012 are the best information available at present. Far from reflecting underlying long-term trends, the rates that CLG projected in 2008 represented an over-optimistic view which has since been refuted by real-life evidence.

2014-based official projections

3.20 These projections were published during the course of this instruction: the 2014-based SNPP on 23 May 2016 (SNPP 2014) and the 2014-based household projections (both Stages 1 and 2) on 12 July 2016 (CLG 2014).

3.21 The SNPP 2014 is based on UK migration trends over the period 2009 to 2014 and international migration trends over the period 2008 to 2014. The Stage 1 household projection, which converts the SNPP 2014 into households, is based on a long-term trend which draws on two additional years of Labour Force Survey data than the CLG 2012.

Recent official releases

3.22 Detailed demographic analysis is set out in Appendix A. All the figures set out in this sub-section have been sourced from that analysis[15].

Population projections

3.23 Over the projection period (2012-37), SNPP 2012 shows the population of Solihull increasing by 27,400 persons (1,096 persons p.a.). For the plan period 2014-33, the population is projected to increase by 22,866 persons (1,203 persons p.a.). The SNPP 2014 anticipates higher population growth over the same period, driven by increased net migration to Solihull.

Household projections

3.24 Over the projection period 2012-37, CLG 2012 shows the number of households in Solihull increasing by 15,282 (611 households p.a.). For the plan period 2014-33, the number increases by 11,837 (623 households p.a.).

3.25 Unlike the population projections, CLG 2014 forecasts that marginally fewer households will form over the plan period at 11,607 (611 households p.a.).

Stage 1 HRRs

3.26 In view of the discussions around HRRs, we have undertaken some further testing of Solihull's 2012- and 2014-based Stage 1 HRRs against the England average, which is set out in detail at Appendix A. This testing shows that in Solihull in 2014 and 2033:

- Male HRRs are lower than the England average in the 20-39 age groups but are broadly the same in the other age groups
- Conversely female HRRs are high in the 20s and 30s but low compared to England at higher ages.

3.27 The differences are explained by differing relationship structure, i.e. in the age groups below 35, there is a lower propensity for Solihull residents to live in couples than England as a whole; however, they are more likely to live in a couple in older age groups than the England average.

3.28 As such, the picture of relatively low HRRs in Solihull for younger males and older females should not be taken at face value. The relative numbers of persons who live in couples or remain single is different in Solihull to the England average. When this is taken into account, HRRs in Solihull are in most cases equal to or higher than the rates for England as a whole.

[15] All CLG household unit data in this report are taken from the 'detailed tables for modelling' and may differ in rounding from the CLG Live Tables relating to household projections

Stage 2 HRRs

3.29 These new rates are not used to derive the headline household projection; the Stage 2 output is constrained to the Stage 1 rates. So while the total number of households is the same regardless of which rate is used, they show a different view of how the population may form into households. This is because the two sets use different trend periods: Stage 1, used to inform the official household projections, uses a long-term (40-year) trend; the Stage 2 HRRs rely on a much shorter 10-year trend.

3.30 The CLG method paper notes:

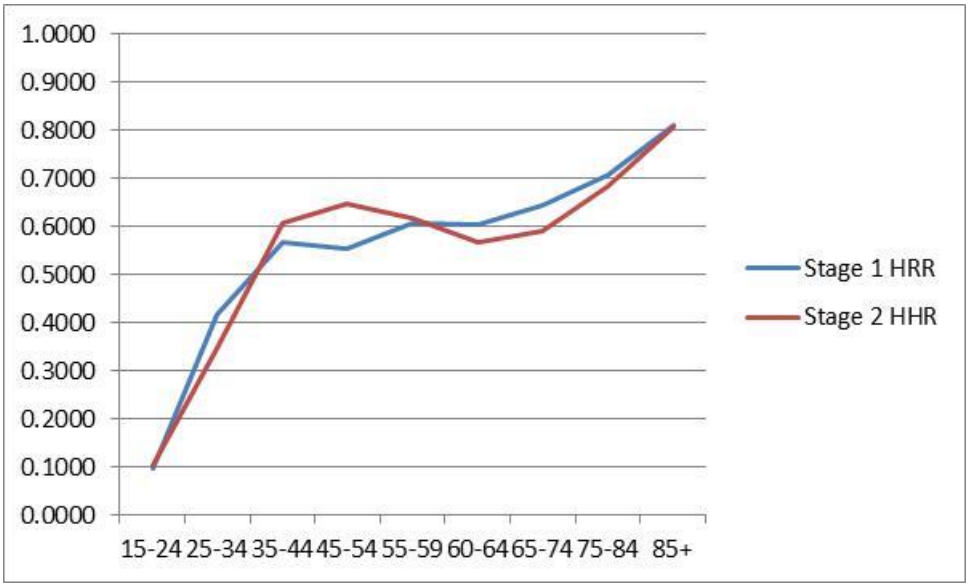
> *'Stage 2 uses 2001 and 2011 Census data from commissioned tables aggregated into 8 household types (Aggregation B). The numbers of household reference persons and the household population for each grouping are used to derive the proportions of persons 'heading' and 'not heading' households. Trends in these rates are projected forward using a two – point exponential method.*
>
> *Stage 2 works from the bottom up by projecting household numbers first at local authority level. These projections are, however, constrained to the Stage 1 totals'* [16]

3.31 For planning purposes using Stage 1 or Stage 2 HRRs makes no difference to the household total. However, because the data sets that inform them are methodologically incompatible, it would be unsound to 'mix and match' Stage 1 HRRs with Stage 2 HRRs. In addition we have some concerns which arise from the Stage 2 HRRs because of the way they are constrained to the Stage 1 HRRs.

3.32 The figure below compares the Stage 1 and Stage 2 HRRs. It is notable that while the Stage 1 HRRs are increasing through the age bands, with some minor discrepancies, the Stage 2 HHRs decline from a peak at 45-54 to a trough at 60-64 before continuing to the highest rates of all at 85+.

16 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/536705/Household_Projections_2014-based_Methdology_Report.pdf

Figure 3.1 Stage 1 and Stage 2 HRRs by age at 2033



Source: Appendix A

3.33 The major differences are that Stage 2 shows too few households headed by persons aged 25-34 and 65-74 and too many at ages 35-44 and 45-54. The discrepancies are significant -17% at 25-34 and 45-54.

3.34 As can be seen from the chart above, Stage 2 HRRs show deteriorating household formation in the 65-74 age groups. This is exceptionally unlikely and verging on the implausible because, applying the Stage 2 HRRs, these people already have households by the age of 64. It is exceptionally unlikely that they will 'deform' at the age of 65. This pattern is likely to be a product of the rates being constrained so they always show the same household number as the Stage 1 HRRs.

3.35 For future planning our recommendation is to use only the Stage 1 HRRs. This is because Stage 1 HRRs are used in the 'official' household projections which the NPPF refers to.

Summary

3.36 We have found no evidence that HRRs in Solihull have been abnormally low in the past, or that the CLG 2012 or 2014 projections expect them to be abnormally low in the future. While there are differences, these are symptomatic of the different relationship structure in the borough, rather than point to any justification for a local adjustment to the CLG 2012 or 2014 rates.

Alternative scenarios

3.37 As we explained earlier, to predict UK migration, the ONS population projections carry forward the trends of the previous five years[17]. This choice of base period can

[17] Similarly the distribution of international migration across local authority areas is projected from the previous six years.

be critical to the projection, because for many areas migration has varied greatly over time. To sensitivity test the impact of different base periods, we have run a number of alternative base period projections.

3.38 We have modelled a range of alternative scenarios; some which seek to pre-empt the 2014-based projections[18] and others which post-dated the 2014 SNPP and CLG 2014. All include unattributable population change (UPC) as additional net migration but in Solihull this is a trivial difference. We consider the following scenarios in detail within this report:

- 2010-15 trends: uses a short five-year trend period, as also used in the SNPP but updates the period to 2010-15 bringing in the new mid-year population estimates released in June 2015 (MYE 2015).
- 2005-15 trends: this uses a longer trend period in order to help smooth any peaks and troughs in the year-to-year migration data while still picking up long-term trends.
- 2001-15 trends: this uses models trends from the 2001 Census data to the latest 2015-based estimates.

3.39 Given the conclusions on the HRRs in Solihull, we have used the 2014 headship rates to convert population into households within our projections. The table below summarises the results of the three scenarios against the 2012 and 2014 household projections.

Table 3.1: Demographic scenarios summary

	ONS/CLG 2012	ONS/CLG 2014	2001-15 trends	2005-15 trends	2010-15 trends
Population (thousands)[19]					
2001	199.6	199.6	199.6	199.6	199.6
2011	206.7	206.7	206.7	206.7	206.7
2014	209.2	209.9	209.9	209.9	209.9
2016	211.4	211.8	211.0	211.2	211.2
2021	217.5	217.9	214.7	215.8	215.7
2026	223.4	224.3	219.0	220.8	220.3
2031	228.9	230.4	223.0	225.4	224.2
2033	230.9	232.8	224.5	227.2	225.5
Population					
2001-14	9,650	10,316	10,316	10,316	10,316
2014-33	21,723	22,866	14,654	17,337	15,659

[18] We do not include the results of those projections which pre-date the 2014-based official publications within the main body of this report but our results are shown in full in Appendix A.

[19] Rounded to the nearest 100.

	ONS/CLG 2012	ONS/CLG 2014	2001-15 trends	2005-15 trends	2010-15 trends
p.a.	1,143	1,203	771	912	824
Households (thousands)[20]					
2001	81.0	81.0	81.0	81.0	81.0
2011	86.2	86.2	86.2	86.2	86.2
2014	87.4	87.6	87.6	87.6	87.6
2016	88.6	88.7	88.3	88.4	88.4
2021	91.6	91.5	89.7	90.4	90.5
2026	94.8	94.7	91.5	92.6	92.7
2031	98.0	97.9	93.5	95.0	95.0
2033	99.3	99.2	94.4	96.0	95.9
Households					
2001-14	6,425	6,584	6,585	6,585	6,585
2014-33	11,837	11,607	6,765	8,398	8,348
p.a.	623	611	356	442	439
Homes[21]					
2014-33	12,139	11,903	6,937	8,613	8,560
pa	639	626	365	453	451

Source: Appendix A ONS population and CLG households © Crown copyright

Population change

3.40 All recent projections show a continuing growth in the population but a slightly different rates dependent upon the base period chosen for migration.

3.41 Of these five the ONS 2012 projection has the highest trajectory and the 2001-14 Trends projection the lowest. At 2014 the range is from 227,200 to 231,900.

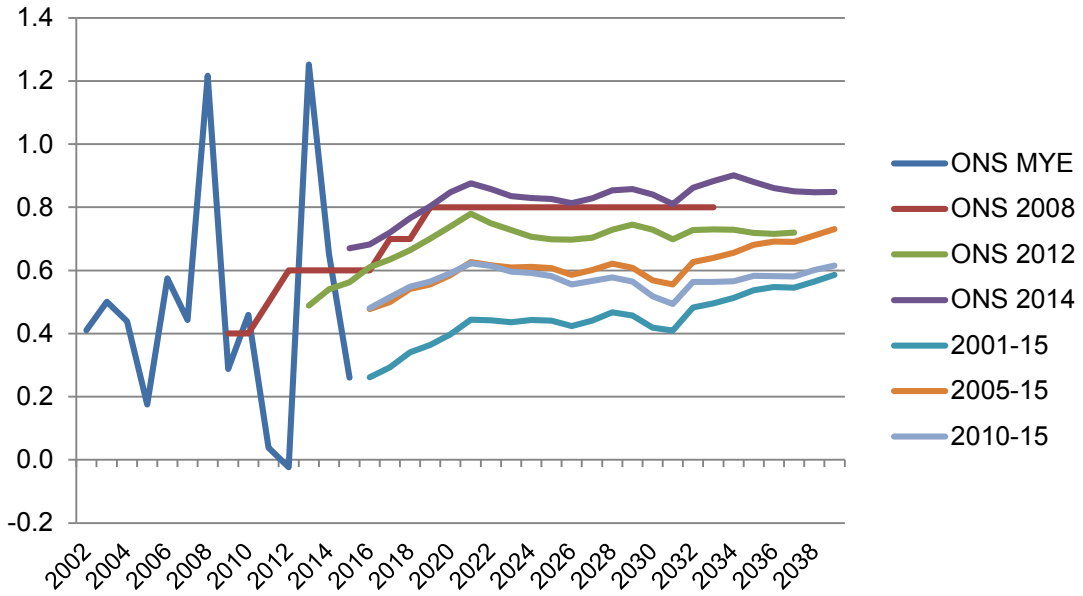
3.42 Since 2001 net migration has always been positive, with the minor exception of 2011-12, but has shown remarkably volatility with two large peaks of around 1,200 a year, which are shown clearly in the figure below. So there will be different outcomes depending upon which period is chosen as a base for migration data.

3.43 For ONS the base is effectively five years given that UK migration is much more significant than international flows. The 2010-15 Trends also includes only five years. Both the ONS 2014 and the 2010-15 Trends include two of the spikes of migration in their bases as well as two very low years. The longer trends also include both spikes as well as years before 2006 with much more steady 'middling' levels.

[20] Rounded to the nearest 100.

[21] 2.49% vacancy and second home allowance made to convert households into dwellings/homes (2011 Census KS401)

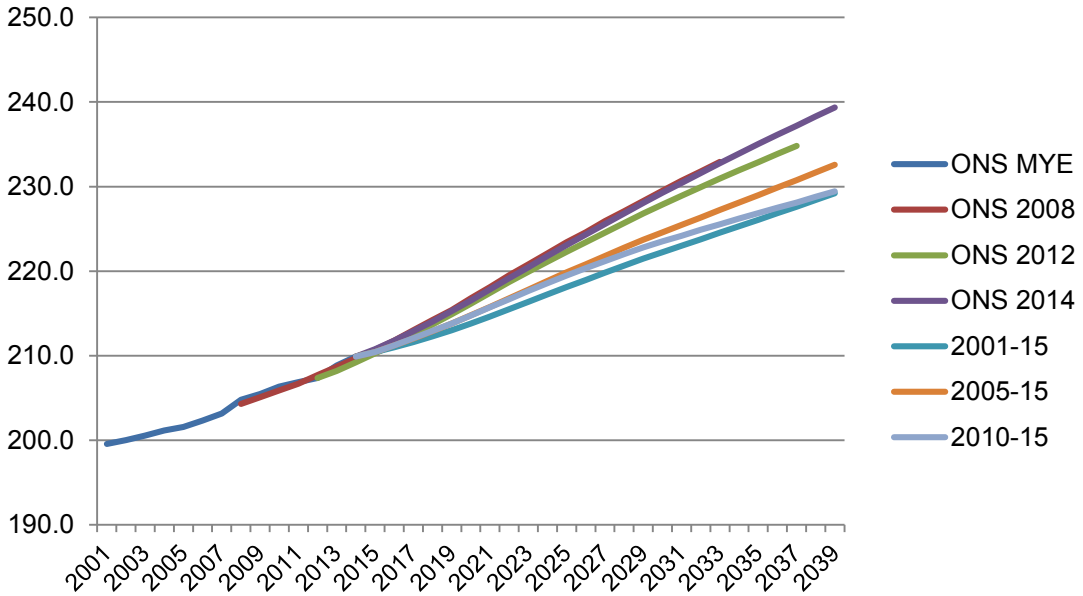
Figure 3.2: Net migration in Solihull (thousands)



Source: ONS © Crown copyright

3.44 The figure below shows the resulting population from each the projections we have considered.

Figure 3.3: Solihull population projections (thousands)



Source: ONS © Crown copyright

Household change

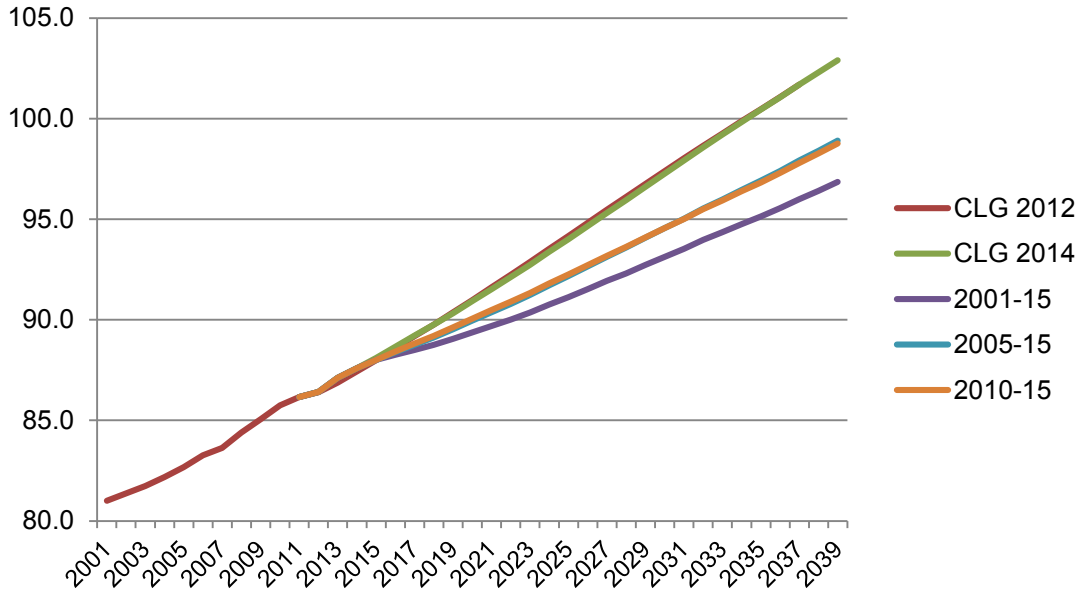
3.45 All the trend-based projections result in a very similar total population by 2033 but a slightly different number of new households and by extension new homes. This is because each base period carries forward a different migration profile. As the age profile of the projections differ, so do the projected rise in households.

3.46 In general the longer the period of migration used as a base the lower the future number of households. This is even with the same CLG 2014 household representative rates being used in each projection. The reasons for the differences lie with two features: the size of the population at 2033 and its age structure.

3.47 Different migration periods have different age structures of migrants. In years before the recession the net migration flow to Solihull was composed of proportionately more working ages and therefore relatively fewer older persons. As older persons have overall higher household representative rates (and lower average household sizes) the more recently based projections with more elderly amongst the migrants will show a higher housing requirement.

3.48 The figure below compares the results of the ONS/CLG 2012 and 2014 projections and the three post-2014 alternative projections for Solihull.

Figure 3.4: Estimated and projected households for Solihull (thousands)



Source: ONS population and CLG household data © Crown copyright

3.49 Each of the trend-based projections shows lower populations and lower numbers of households than the CLG 2012 and 2014 projections. The lowest is the 2001-15 Trends projection that implies the requirement to supply an additional 6,765 new homes over the 19 years.

3.50 The reason for the lower housing requirement, apart from the 2001-15 Trends projection having 8,200 fewer persons at 2033 than the CLG 2014 projection, is the different age structure as a result of using a longer period of migration in the base.

3.51 Analysis of the age structure underlying each scenario shows that there are more households at all ages over 50 in the CLG 2014 projection. However, it is the substantially lower level of representatives between ages 50 and 69 than the CLG 2014 in all three trends projections that is the main reason there are fewer households in the trends projections. This clearly illustrates the influence of flows

before the recession that included more people of working age from both the UK and overseas.

3.52 The table below sets out a comparison of all the projections, including those projections that were updated following the publication of the 2015 mid-year estimates. In each case, the updated projections show less need than the previous run; and the projections are consistently lower than the official projections.

Table 3.2 Comparing the projections - annual average net housing need 2014-33

	Official five-year	Short-run trend	Medium-run trend	Long-run trend
CLG 2012	639			
CLG 2014	626			
2010-15		451		
2005-15			453	
2001-15				365

Source: Appendix A (Solihull Demographic Update Table 6)

A preferred demographic scenario

3.53 We have tested a number of alternative demographic projections. The latest official household projections are 2014-based but the PPG continues to refer to the 2012-based projections. These are now several years old and by the time the plan is examined will have been formally superseded by the 2014-based projections. We therefore think it sensible to give considerable weight to the alternative 2014-based projection as the demographic starting point.

3.54 However, Solihull is only one part of a much larger HMA. For that larger HMA, the SHNS uses a 2012-based demographic starting point. The SHNS noted that:

> *'Any discrepancy between our numbers and local alternatives does not necessarily suggest that local assessments are obsolete or wrong. In planning for their areas, Councils will consider a range of evidence which includes both this study and local assessments. It is for the Councils to determine what weight they give to these different sources of evidence.*
>
> *Our suggestion is that the total housing need shown in this report be used as a minimum estimate of the HMA's total housing need. If this need is met in full across the HMA, the area will provide sufficient new homes for all the households expected to live in the area.'*[22]

3.55 There is a risk that should Solihull depart from the 2012-based projections by adopting 2014-based projections, some housing need will 'fall through the cracks' and

[22] Paras 2.26 & 2.27

fail to be addressed in any of the HMA councils' evidence. So while we recommend using the 2014-based projections as the demographic starting point reflecting the most recent population data available, we need to have regard to the difference between this projection and the 2012-based projection to address this risk.

3.56 Although the 2012-based projection for Solihull was lower than the 2014-based projections, we need to consider addressing unmet need which has arisen between 2011 and 2014 i.e. homes the SHNS assumed that Solihull would build in this period. Failing to do so would mean that the Local Plan Review would not be consistent with that of its largest and most relevant neighbour.

3.57 Between 2011 and 2014 Solihull has under-delivered against the 608 dpa set out in SHNS i.e. a gap has emerged. Based on this, the SHNS anticipated that Solihull would deliver 1,824 homes; however, actual completions totalled 822 i.e. an SHNS gap of 1,002 dwellings. This 'gap' needs to be made up over the life of the plan[23].

3.58 However, the PPG guides us to use the most recent projections. The 2014-based projection sets out need for 11,903 dwellings across the plan period (626 dpa). Planning on this basis would lead to a modest consistency gap with the SHNS.

3.59 It is possible that when other plans in the HMA are reviewed and brought up to date with a 2014-base that they will have a higher demographic starting point i.e. migration that would have gone to Solihull will have gone elsewhere. But assuming that other councils will cover this future gap would be a risky approach.

3.60 We recommend that to maintain consistency with the wider HMA, this difference should be included in Solihull's OAN if no other authority within the HMA is willing or able to accommodate this future gap.

3.61 Table 3.3 sets out these steps.

Table 3.3: Preferred demographic scenario

Demographic starting point				
1	2014-33	Additional households Additional dwellings	11,607 11,903	CLG 2014
2	2011-14	Additional dwellings anticipated	1,824	SHNS
3	2011-14	Dwellings completed	822	SMBC
4	2011-14	SHNS gap	1,002	2-3
Demographic uplift				
5	2014-33	Demographic starting point + SHNS gap	12,905	1+4

Source: PBA

[23] Note – we do not use the phrase 'backlog' because this has a specific meaning for the purposes of five year housing land supply.

3.62 In relation to under-delivery, the table assumes the OAN gap is addressed over the plan period (i.e. before 2033); increasing the starting point by 53 dpa. But there is merit in seeking to ensure that land is available to address this gap as soon as possible rather than wait to address this need over the whole plan cycle.

3.63 We considered whether to propose a phased OAN, with a higher OAN for the first few years of the new plan. But this would mean we would have to exercise judgement about how long it is realistic to phase this gap when the data suggests these homes should have been provided in the past. However, it may well be that this need has been absorbed elsewhere in the larger HMA or nationally, and there is no guarantee that these missing households will form in Solihull if and when the supply comes forward.

3.64 Given the Council can only allocate sites and not actually deliver the gap itself, a pragmatic approach would suggest that, when identifying sites in the Local Plan Review, the Council should seek to provide additional deliverable supply, available from when the plan is adopted (or as soon as practical), to both meet its per annum requirement and cover to this gap (and any other emerging between 2014 and the plan adoption). This 'frontloading' of the deliverable supply should allow the development industry to fill this gap as fast as it is able to deliver.

3.65 In the next sections we look at whether this updated demographic starting point should be further adjusted to reflect market signals and other adjustments in line with the PPG.

4 PAST DELIVERY AND MARKET SIGNALS

Introduction

4.1 The starting point of our 'market signals' analysis is provided by paragraphs 2a 015, 019 and 020 of the PPG:

> *'The household projection-based estimate of housing need may require adjustment to reflect factors affecting local demography and household formation rates which are not captured in past trends. For example, formation rates may have been suppressed historically by under-supply and worsening affordability of housing. The assessment will therefore need to reflect the consequences of past under delivery of housing. As household projections do not reflect unmet housing need, local planning authorities should take a view based on available evidence of the extent to which household formation rates are or have been constrained by supply.'*[24]
>
> *'The housing need number suggested by household projections (the starting point) should be adjusted to reflect appropriate market signals, as well as other market indicators of the balance between the demand for and supply of dwellings. Prices or rents rising faster than the national/local average may well indicate particular market undersupply relative to demand …'*[25]
>
> *Appropriate comparisons of indicators should be made. This includes comparison with longer term trends (both in absolute levels and rates of change) in the: housing market area; similar demographic and economic areas; and nationally. A worsening trend in any of these indicators will require upward adjustment to planned housing numbers compared to ones based solely on household projections.'*[26]

4.2 Considered together, the above passages explain why market signals are relevant and how they should be used in relation to housing needs assessments. In summary:

- Demographic projections roll forward past reality – the amount of housing that has been provided in the reference period on which they are based.
- If this past supply met demand (need) in full then, other things being equal, the projection should be an accurate reflection of future demand.
- But if past supply under delivered against demand, then the projections will carry forward that under delivery; therefore they understate demand and should be adjusted upwards.

[24] Reference ID: 2a-015-20150227
[25] Reference ID: 2a-019-20150227
[26] Reference ID: 2a-020-20150227

- To determine whether past supply has indeed under-delivered against demand, the PPG suggests two kinds of evidence: a series of specified 'market signals' such as prices or rents, and 'other indicators' which are not specified.

4.3 Below, we use two kinds of evidence to assess the balance of demand and supply in line with the PPG. Firstly, we interrogate the history of past delivery to see if there is any direct evidence that the supply of housing land has underprovided against demand. Secondly, we analyse the specific market signals listed in the PPG.

Policy context

4.4 Since 2001, Solihull's planning policy has been influenced by regional planning guidance (RPG 11) that emphasised growth in Major Urban Areas in the West Midlands region. The guidance regarded this strategy as more sustainable and encouraged the regeneration of existing urban areas.

4.5 The Solihull Unitary Development Plan (UDP) was adopted in February 2006. The UDP had a housing target of 4,000 homes between 2001 and 2011. This translates into an annual housing target of 400 dwellings per annum (dpa).

4.6 The UDP took its housing target from the emerging West Midlands Regional Spatial Strategy (RSS). The RSS was adopted in January 2008.

4.7 Like the UDP, the RSS sought to preserve the Green Belt by focusing housing development in the Major Urban Area (MUAs) which included Solihull. This strategy was known as the 'Urban Renaissance' and sought to regenerate the MUAs. The metropolitan area that includes Solihull, Birmingham, Coventry and the Black Country were identified as major economic growth areas. The West Midlands RSS had a plan target of 400 dpa between 2001 and 2011 rising to 470 dpa between 2011and 2021.

4.8 Solihull's current policy position comprises of the Local Plan. The Local Plan was adopted in December 2013. The Local Plan had a housing target of 11,000 dwellings between 2006 and 2028, translating into an annual target of 500 dwellings.

4.9 Following its adoption, the Local Plan faced a legal challenge resulting in the plan's housing requirement being withdrawn. The housing requirement is subsequently being addressed through a review of the Local Plan. In addition, the adopted plan does not address Birmingham's unmet housing need under the Duty to Co-operate.

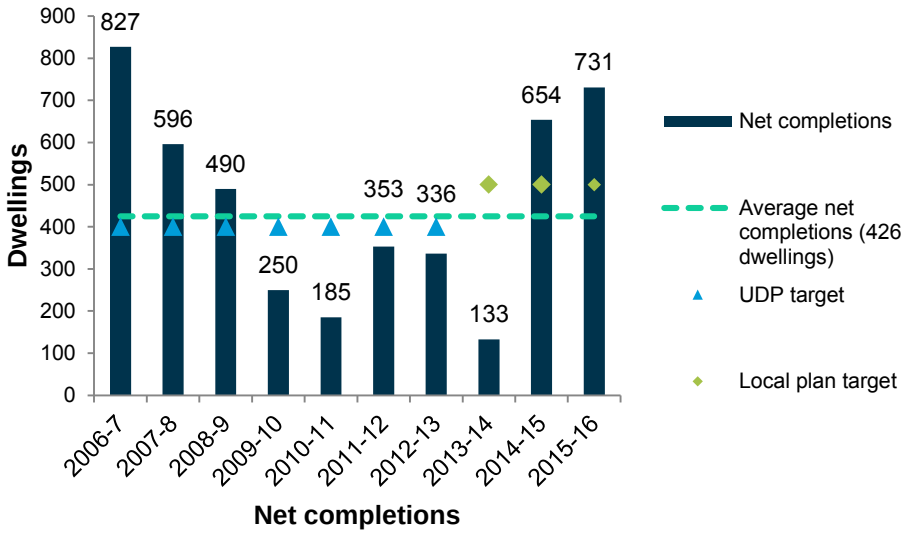
4.10 The Local Plan review will also look at the spatial implications of the Government's proposed High Speed 2 (HS2) line. A transport interchange for Solihull following 'Garden City' principles is currently being proposed by SMBC.

Past delivery

4.11 To see if planning in Solihull has underprovided housing land in the period on which our projections are based, we first examine the history of housing development in the borough. We then look at various house prices, affordability, rents and finally overcrowding.

4.12 Figure 4.1 below shows net housing completions in Solihull between 2001 and 2015:

Figure 4.1: Net housing completions, Solihull



Source: Solihull AMRs / Local Plan / RSS

4.13 Net completions in Solihull in the first decade of the 2000s largely met and often exceeded the UDP and West Midlands RSS (2008) targets. The UDP took its target from the emerging West Midlands RSS. Between 2003 and 2009, delivery was exceptionally high with delivery in 2005-6 in particular almost double the Unitary Plan target. Completions averaged around 646 dwelling per annum during this period against an adopted plan target of 400 dwellings per annum.

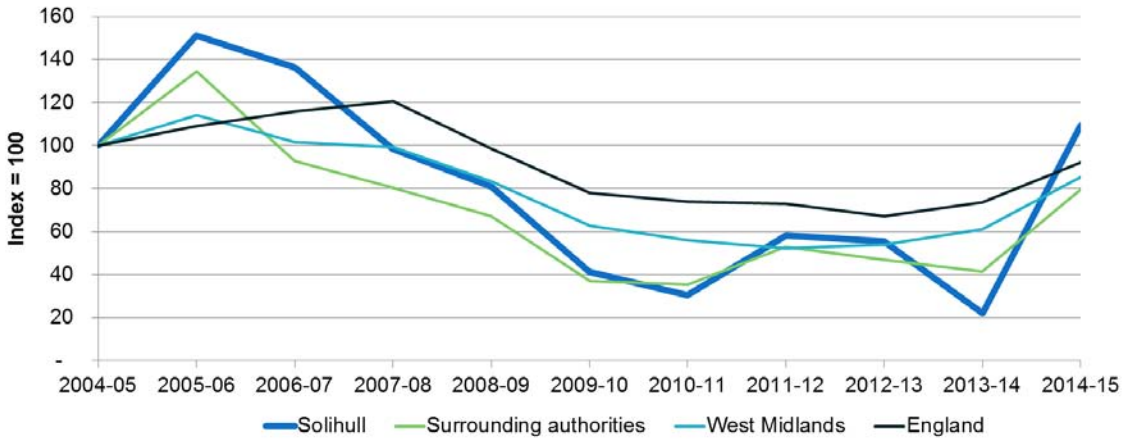
4.14 Completions from 2010 onwards dipped below the West Midlands RSS and Local Plan. During this period, average completions averaged 399 dpa against a plan target of 500 dpa. This is likely due to the effect of the economic recession but also because the borough had built out most of its housing allocations. This was confirmed by a public inquiry into the Moat House Farm (reference: APP/Q4625/A/11/2157515) in which the Inspector confirmed the lack of a five-year land supply in determining the appeal.

4.15 Between 2001 and 2012, the borough averaged around 215 net additional dwellings on windfall sites[27]. This is partly due to the Government's policy that prioritised development on brownfield sites, which in Solihull's case tended to be small sites, and partly due to an increase in the density of new developments.

4.16 Figure 4.2 below benchmarks housing completions net completions in the borough with those of neighbouring authorities, region and England.

[27] 2011-13 AMR para. 2.1.3

Figure 4.2: Indexed net housing completions



Source: CLG Table 122 / Solihull AMRs (06/07, 10/11, 11-13)

4.17 The chart above shows that Solihull outperformed the comparator areas in the mid-2000s and declined significantly in the recession as the borough had run out of site allocations and the rate of housing development also slowed down.

4.18 Figure 4.3 examines the completions data for Solihull in further detail. It is evident that in period since 2006-7, there have been significant losses of dwellings within the borough which have served to depress net completions relative to national and county trends, particularly in 2013-14.

Figure 4.3: Gross completions and losses 2006-2015

Source: Solihull AMRs

4.19 The borough's latest Annual Monitoring Report stated that the (not adopted) housing land provision target had not been met but that this was not surprising. Reasons for this included the only recent adoption of the Local Plan, the period of recession and

poor housing market conditions of the previous six years. In addition, it noted that '*the high levels of demolition and site clearance associated with the initial years of the North Solihull Regeneration Programme*' [28].

4.20 That programme included large-scale estate renewal in three wards (Chelmsley Wood, Kingshurst and Fordbridge, and Smith's Wood) where a significant proportion of the housing stock had been identified as failing to meet the Decent Homes standard. Review of the losses on a ward-by-ward basis confirms that it is those wards in the northern part of the borough that have been subject to greatest losses of housing, accounting for over 70% of the borough's demolished housing stock, with one ward (Smith's Wood) recording a net loss of housing over the period since 2006-7.

4.21 Completions for the benchmark areas largely tracked the economic cycle; however, this may mask locally-specific factors that are relevant to Solihull, namely the supply of housing land.

4.22 Completions fell during the recession, though they fell at a slower rate in Solihull compared to the surrounding areas. This suggests a more robust performance than adjoining areas and reflects the rapid build out of UDP allocations. The trough of the recession coincided with Solihull having a very limited housing land supply. Solihull then appears to have recovered from the recession at a faster rate, with new sites allocated in the 2013 Local Plan being taken up quickly.

Market signals

House prices

4.23 The PPG advises that house prices be monitored to identify if longer term changes indicate an imbalance between the demand for, and the supply of housing.

4.24 Land Registry data published by the ONS[29] shows that the average house price in 2014 for Solihull was £179,995 compared to £167,750 for the West Midlands[30] and £217,250 for England. So while Solihull's prices are 83% of the national average, they are higher regionally.

4.25 Figure 4.4 below shows the change in median house price indexed from 1996 against neighbouring authorities[31], regional and national figures.

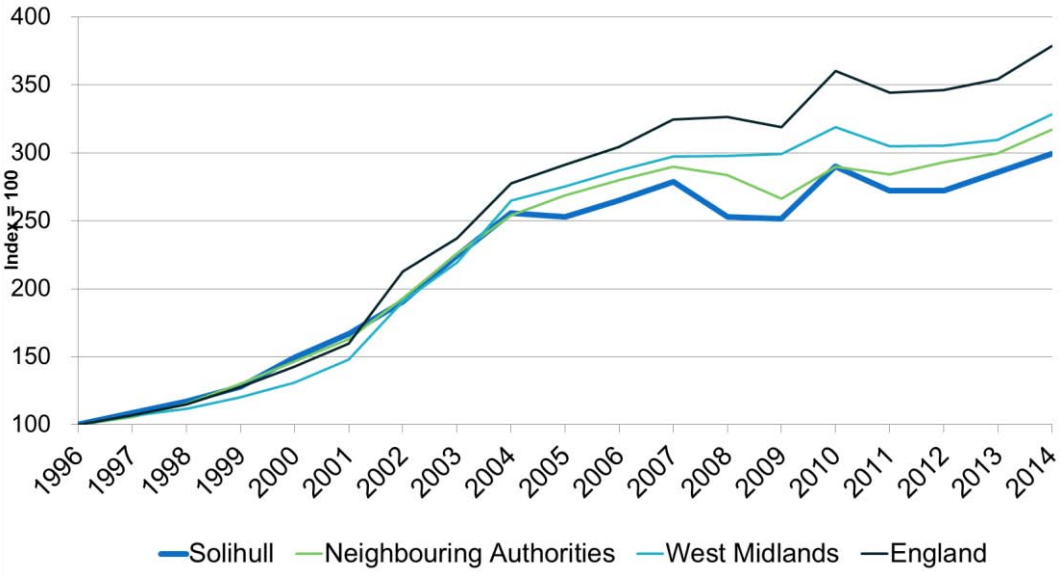
[28] Annual Monitoring Report 2011-2013 para. 2.1.1

[29] *House Price Statistics for Small Areas,* ONS available at: http://www.ons.gov.uk/ons/rel/regional-analysis/house-price-statistics-for-small-areas/1995-2014/rft1.xls (Table 1b)

[30] Mix-adjusted average house prices by region (DCLG table A2), ONS House Price Index Mar 2015

[31] Neighbouring authorities are Birmingham, Coventry, Warwick, Stratford-on-Avon and Bromsgrove

Figure 4.4: Indexed median house prices, 1996-2014



Source: CLG Table 582, ONS House Price Statistics for Small Areas, House Price Index

4.26 The changes in house price in Solihull closely matched the benchmarks up to the early 2000s. From then on, England's average house price accelerated and outperformed Solihull, the region and neighbouring authorities. Since the recession, average house prices in the West Midlands and the neighbouring authorities have grown at a faster rate than Solihull.

Affordability

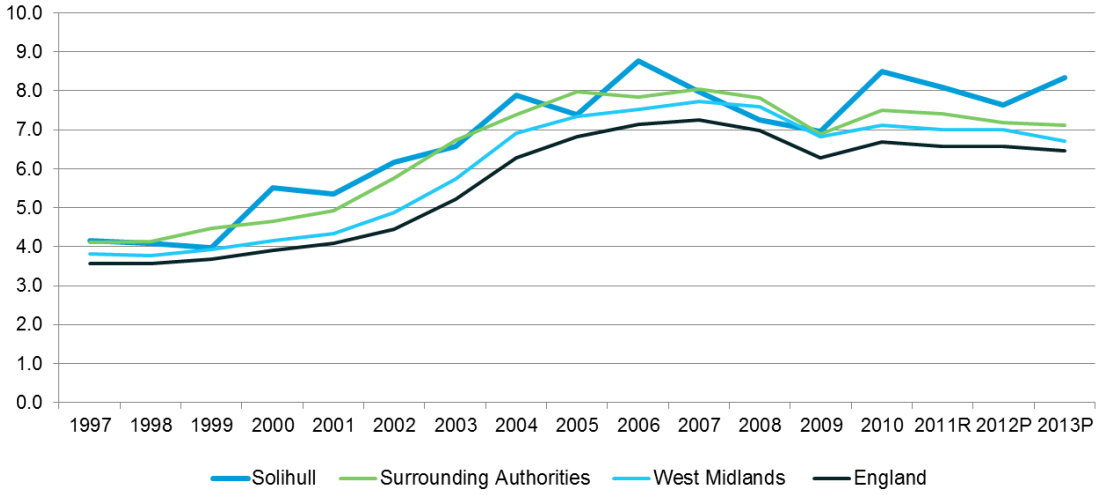
4.27 Affordability, as defined by CLG, is the ratio of lower-quartile house prices to lower-quartile earnings. A high ratio indicates low affordability, where the cheapest dwellings are less financially accessible to people on the lowest incomes. Figure 4.5 below shows Solihull's affordability ratio from 1997 against comparator areas[32].

4.28 The figure clearly shows that affordability has generally worsened since 1997; from 2000 onwards, it worsened at a much faster rate for all areas, peaking in 2007.

4.29 While Solihull's affordability ratio has largely tracked surrounding authorities, it is generally less affordable. Additionally, although the affordability ratio fell during the recession, in line with Solihull's quicker house price recovery than surrounding areas, affordability subsequently worsened again more quickly. Solihull has, since 2009, been consistently less affordable than all the comparators.

[32] Surrounding authorities are Birmingham, Coventry, Warwick, Stratford-on-Avon and Bromsgrove

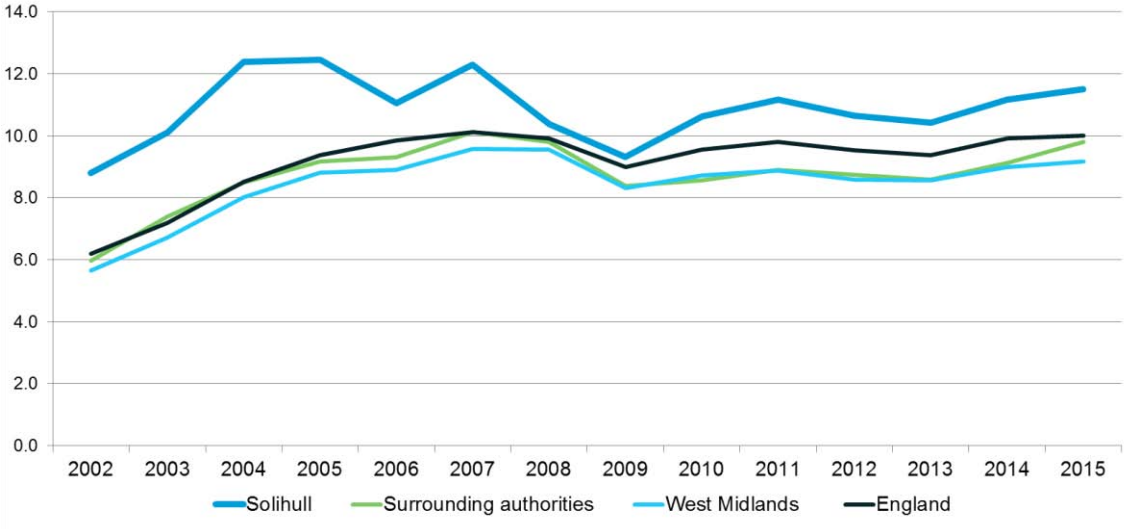
Figure 4.5: Ratio of lower quartile house prices to lower quartile earnings



Source: CLG Table 576 Ratio of lower quartile house price to lower quartile earnings

4.30 In providing this analysis, we note that the PPG advises that the ratio between lower-quartile house prices and lower quartile earnings can be used to assess the relative affordability of housing. But the CLG table on which this data is produced is based on the earning of workplace jobs in the local authority rather than the earnings of residents living in local authority. As such, we have devised a table comparing the ratio of lower-quartile house prices to lower-quartile earnings by place of residence as shown in Figure 4.6 below:

Figure 4.6: Ratio of lower quartile house prices to lower quartile resident earnings



Source: see footnote[33]

[33] Lower quartile gross annual earnings derived from Annual Survey of Hours and Earnings (ASHE); ASHE data from 2014/15 provisional. Lower quartile house prices by region and country, quarterly rolling year, year ending Q4-1995 to year ending Q2-2015, ONS (HPSSA dataset 15)

4.31 This shows that since 2001, Solihull has been consistently less affordable than the surrounding authorities, the West Midlands and England as a whole. While the position was less pronounced in the recession, because house prices recovered faster. It also appears to be relatively less affordable to those working in the borough.

Private rents

4.32 The PPG explains that rents provide an indication of the cost of consuming housing in a market area. Mix-adjusted[34] rent information shows changes in housing costs over time. According to the PPG, longer-term changes may indicate an imbalance between the demand and supply of housing.

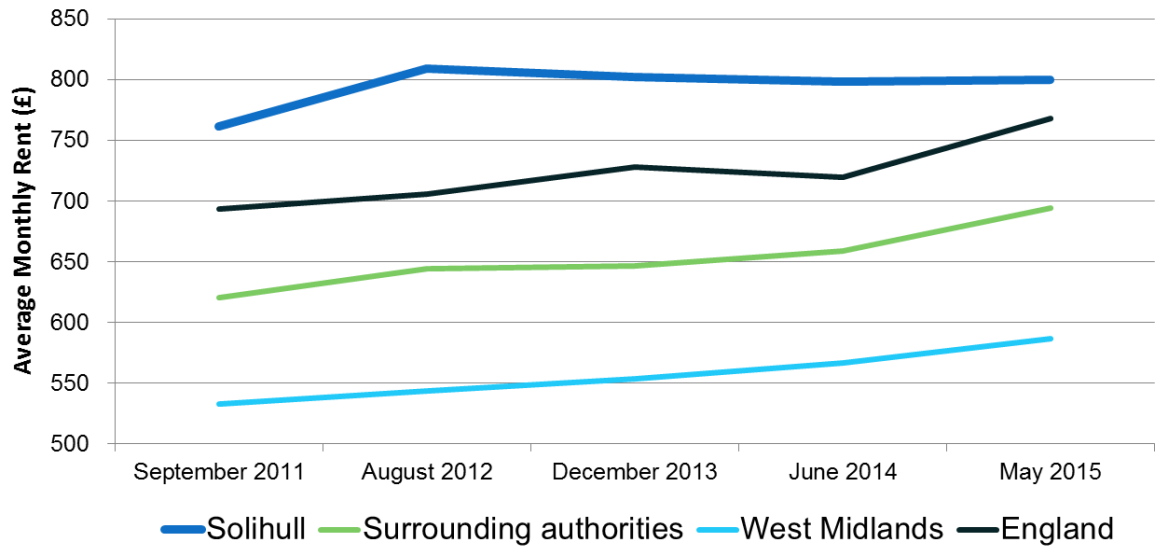
4.33 Data for market rents on a statistically consistent and comparable basis has only been available since 2011. The figure below provides a comparison of rents between Solihull, neighbouring authorities (Birmingham, Coventry, Warwick, Stratford-on-Avon and Bromsgrove), regional and national rents.

4.34 The chart below shows three clear distinctions. Average rents in Solihull are consistently higher than any of the comparator areas followed by the national average. Surrounding authorities and the regional average follow after.

4.35 While rents have risen steadily from 2011, rents in Solihull have remained largely flat while the national average and that of surrounding authorities has increased at a faster rate.

4.36 The high rents in Solihull indicate that the housing market is relatively constrained compared to the other comparator areas. However, the slow rising private rents point to a less constrained housing market.

Figure 4.7: Market monthly rents



Source: VOA Private Rental Market Statistics

[34] Adjusted to allow for the different types and sizes of properties

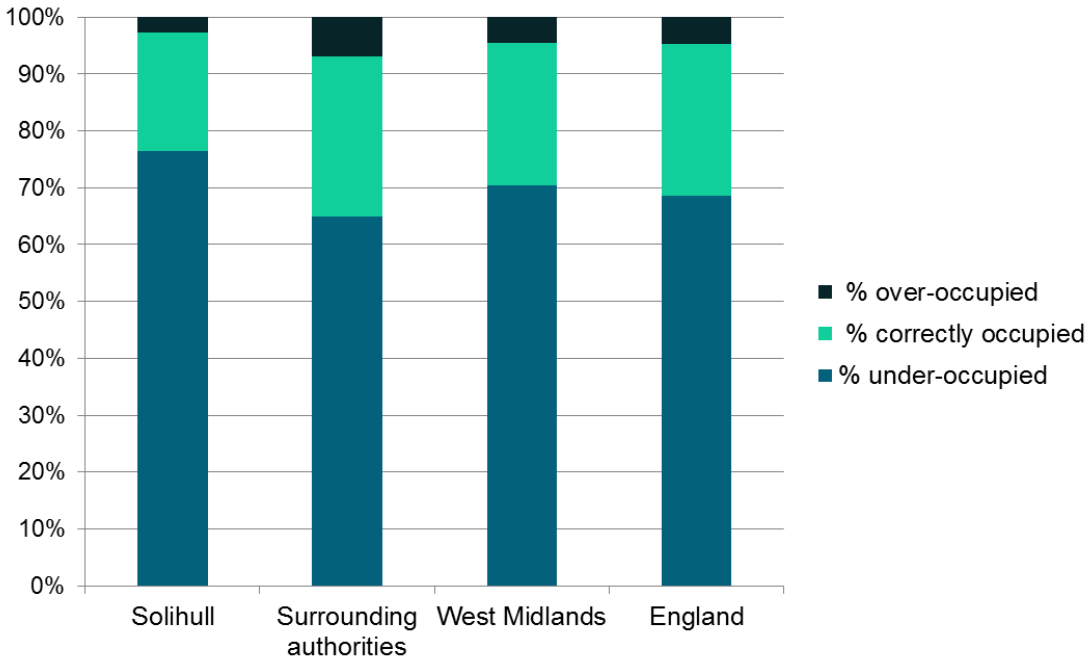
Overcrowding

4.37 According to the PPG, indicators of overcrowding and concealed families could demonstrate unmet need for housing.

4.38 While overcrowding could be a symptom of relative unaffordability; it could also be related to the current stock being ill-suited to meeting the needs of the population. The presence of concealed families could be symptomatic of suppressed household formation rates but, in itself, it is not necessarily an indicator of unmet need because people could be choosing to live in households with more than one family.

4.39 Figure 4.8 below uses 2011 Census data occupancy rating as defined by the ONS. The ONS base the rating on the number of occupied bedrooms in the household. Figure below shows the occupancy rating of Solihull against comparator areas.

Figure 4.8: Occupancy rating



Source: ONS Table QS412EW

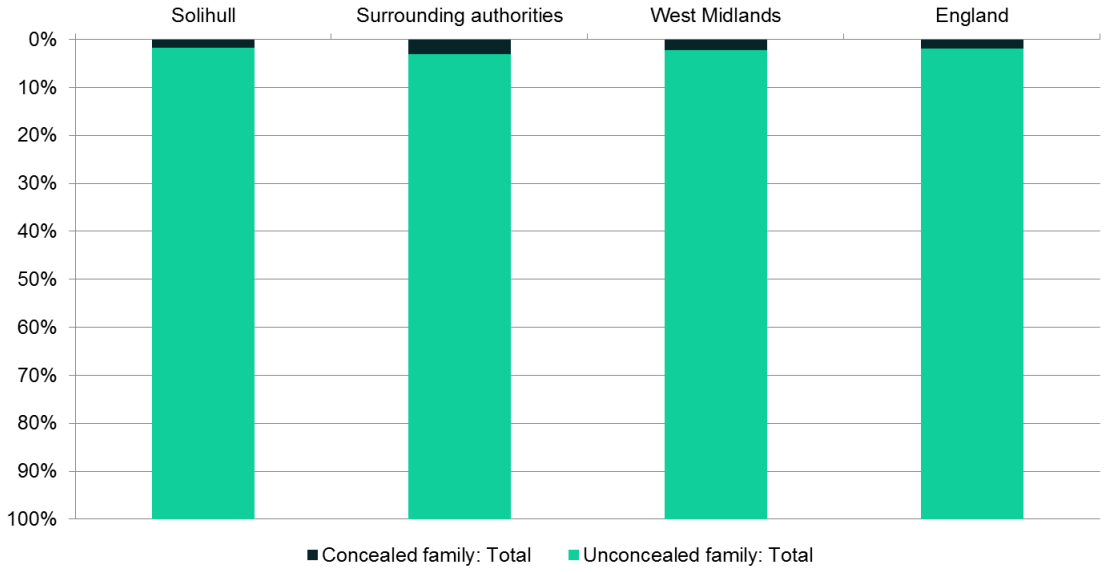
4.40 Solihull has a smaller percentage of over occupied housing (2.6%) compared to surrounding authorities (6.9%), West Midlands (4.5%) and England (4.6%). The borough also has the highest proportion of under occupied homes when compared to all other comparator areas.

4.41 On the whole, Solihull does not have an overcrowding problem and the large proportion of homes containing spare rooms points to the borough's relative affluence and falling household size.

4.42 In addition to overcrowding, ONS also publishes data on concealed families based on 2011 Census data. ONS defines concealed families as households that do not include the Household Reference Person.

4.43 The figure below compares the percentage of concealed households in Solihull and comparator areas.

Figure 4.9: Concealed families



Source: ONS Table LC1110EW

4.44 Again, Solihull has the lowest proportion of concealed families, followed by England, the West Midlands and the surrounding authorities.

4.45 Thus in terms of overcrowding and concealed families, Solihull appears to be in line with the national average for both indicators demonstrating that the Borough does not have unmet housing need.

Conclusions

4.46 The PPG sets out a number of indicators (not exhaustive) relevant when considering whether an uplift based on market signals is required. In looking at these indicators, the PPG advocates:

> *'comparison with longer term trends (both in absolute levels and rates of change) in the: housing market area; similar demographic and economic areas; and nationally. A worsening trend in any of these indicators will require upward adjustment to planned housing numbers compared to ones based solely on household projections.'*[35]

What the market signals are telling us

4.47 While dwelling completions exceeded their plan targets, high house prices and rents indicate an imbalance in demand of housing and available supply. Interestingly, Solihull has a relatively low proportion of overcrowded homes despite the high cost of

[35] 2a-020-20140306

housing. And average market rents have risen slower than comparator areas in recent years.

4.48 The indicators of affordability are however more complex. With reference to the PPG, it is clear that Solihull has become absolutely less affordable over the longer term with reference to comparators at a national level or within the HMA. In relative terms, data from recent years points towards a worsening in affordability; however, when this is set in the longer term, it is clear that the current rate of change in Solihull is not as rapid as it was before the recession.

4.49 Analysis of house price data suggests that the absolute worsening in affordability is linked to the quicker recovery of house prices in Solihull compared to surrounding areas. Furthermore, when we have looked at affordability with reference to those living and working in the borough, it is clear that Solihull has been, over the long term, less affordable than surrounding areas.

4.50 We think that, taken together, the indicators justify a modest market signals uplift. This is largely because of the absolute level of affordability rather than as a consequence of the rate of change. And it is because the rates of change have not been exceptional in the context of comparators that we are clear that this scale of uplift can be modest. We consider this further below.

Scale of uplift

4.51 In terms of the market signal uplift, the PPG is not specific and states that:

> *'Market signals are affected by a number of economic factors, and plan makers should not attempt to estimate the precise impact of an increase in housing supply. Rather they should increase planned supply by an amount that, on reasonable assumptions and consistent with principles of sustainable development, could be expected to improve affordability, and monitor the response of the market over the plan period.'*

4.52 So there is no fixed empirical or statistical approach to arrive at the level of adjustment to address market signals. Based on the PPG requirements, Inspectors' decisions approached the matter as an exercise of judgement.

4.53 In Eastleigh, the Inspector noted that affordability had worsened more than the national average and rents had risen more than the average. On this basis he concluded that '*a cautious approach is reasonable bearing in mind that any practical benefit is likely to be very limited because Eastleigh is only a part of a much larger HMA… Exploration of an uplift [to the demographic projections] of, say, 10% would be compatible with the 'modest' pressure of market signals*'.

4.54 In Uttlesford, the Inspector mentioned that house price increases had been slightly less than for Essex and England but from a very much higher base; median rents were higher than these comparators and had risen faster; and affordability had risen to a much higher peak prior to the recession. 'Taken in the round' these market signals as well as affordable need, the Inspector advised an uplift of 10%. He did not apportion the uplift between these two factors.

4.55 In Canterbury, the Inspector focused on three main market signals:

- Median house prices 12% above the national average (for comparison, Solihull house prices are 1% above the national average);
- House price growth some 20 percentage points above the national average (Solihull's growth is below national average);
- Affordability ratio consistently above the national benchmark - currently 9 against 6.5 for England (the ratio for Solihull is 8.3).

4.56 The Canterbury Inspector recommended an uplift of 30% to take account of these market signals, together with future jobs, affordable housing need and a post-recession recovery in household formation rates. The Inspector noted that these four factors overlapped and did not apportion the uplift between them.

4.57 From the three cases discussed above we cannot draw definite conclusions about the correct market signals uplift for Solihull. This is partly because the evidence used in Eastleigh, Uttlesford and Canterbury is not directly comparable: the indicators used are not always the same, some are measured as absolute levels and others as rates of change; they refer to different dates and are compared with different benchmarks. A further difficulty is that only one of the three Inspectors, in Eastleigh, provides an uplift for market signals alone. In the other two areas the adjustments they propose also take account of affordable need, future jobs and the impact of the recession on household formation.

4.58 In short, the size of any market uplift cannot be simply inferred from earlier examples; it also requires judgement. In our judgement, market signals for Solihull point to 'modest' market pressures, similar to Eastleigh and Uttlesford. This suggests an uplift of 10% over the plan period.

4.59 A 10% uplift also appears proportionate given the upward adjustments to the demographic starting point recommended in Section 3 to ensure consistency with the wider HMA and prevent any under-delivery since the base date of the SHNS from not being brought forward.

Applying the uplift

4.60 The PPG is not specific on the extent of any uplift. To inform our advice, we have reviewed recent inspectors' decisions on this point. In our view, because indicators relating to delivery and affordability are the more important indicators and it is those show signs of constraint in the local market, there is evidence to support a market signals uplift.

4.61 However, because other indicators are more favourable, on balance the constraints point to a minor market signals issue, we think that scale of the upward adjustment required is minor. With reference to the approach endorsed by Inspectors elsewhere on this point, a minor uplift would typically attract a 10% increase to the starting point.

4.62 As set out in Section 3, a small uplift to the demographic starting point is proposed to ensure needs are met in full across the HMA. In our view, because we have diagnosed market pressures that have resulted in a lower quantum of housing being

delivered than forecast in the SHNS, for robustness the market signals uplift should be applied to the entirety of the forecast requirement for additional dwellings from 2011 onwards. This approach is not set out in the NPPF or the PPG; the recommendation that SMBC apply the uplift in this way is based on our judgement.

4.63 The table below sets out this process.

Table 4.1 Market signals uplift

	Input	Dwellings	
1	Demographic starting point	11,903	CLG 2014
2	10% market signals uplift	1,190	1*10%
3	SHNS projected delivery (2011-14)	1,824	Table 3.3
4	10% market signals uplift	182	3*10%
5	Dwellings completed (2011-14)	822	Table 3.3
6	Total need	14,278 751 dpa	1+2+3+4-5

Source: PBA

4.64 An SHNS-consistent approach results in need of 751 dpa, based on a requirement of 14,278 dwellings in the period between 2014 and 2033[36].

Relationship with the SHNS

4.65 This report is 'policy off' and does not consider the issue of unmet need arising across the wider HMA in detail. However, the SHNS made provision for constituent authorities within the HMA to 'offset' any unmet need arising across the HMA as a whole against any market signals uplift.

4.66 Specifically, the SHNS (Stage 3) noted that:

> *'When undertaking local assessments, Councils should specify whether any local increase in projected need (through market signal adjustments or to provide more labour for job growth) makes a contribution to the missing homes in the HMA or alternatively requires additional migration to be attracted into the HMA.'*[37]

4.67 In this case, with reference to Table 4.1, the number of additional dwellings arising from the market signals uplift is 1,373. There is no reason to expect that this uplift would increase migration from outside the HMA and therefore it is expected to make a contribution to meeting the unmet need identified within the HMA. It would be a policy-on decision for SMBC to make to offset 1,247[38] (for the period 2011-2031) of

[36] If the SHNS uplift is not included in the OAN, the need figure is 689 dpa based on a requirement of 13,094 dwellings (comprising items 1 & 2 from Table 4.1 - 11,903 + 1,190)

[37] Para. 2.28

[38] Calculated from rows 2 and 4 of Table 4.1: only 17 years of the first market signal uplift fall between 2011-31 ((1,190/19)*17 = 1,065), plus all the market signal uplift arising from the SHNS under-delivery (row 4) which relates to the period 2011-14 (182). The totals 1,247 (rounded)

this 1,373 uplift against any contribution the borough may make to the wider HMA shortfall.

5 FUTURE JOBS

Introduction

5.1 The NPPF at paragraph 70 says that planning should integrate the location of housing, economic activity and community facilities and services. The PPG discusses the relationship between housing need and employment at paragraph 018[39]. It advises that plan-makers should make an assessment of future job growth and notes that, if future labour supply is less than this projected job growth, this could

> *'result in unsustainable commuting… or reduce the resilience of local businesses'. In such circumstances, plan-makers will need to consider how the location of new housing and infrastructure development could help address these problems.'*

5.2 Planning Inspectors have interpreted this to mean that demographic projections should be tested against expected future jobs, to see if housing supply in line with the projections would be enough to support those future jobs. If that is not the case, the demographically projected need should be adjusted upwards accordingly; such adjustments overlap with the adjustments for past supply and market signals discussed in Chapter 7[40]. An alternative solution may be changes in commuting, whereby a labour deficit in one area is balanced by a labour surplus in neighbouring areas, provided that the planning authorities concerned are in agreement and the resulting travel is sustainable.

5.3 Inspectors' advice also suggests that future jobs cannot be used to cap demographic projections. In other words, if the demographic projections provide more workers than are required to fill the expected jobs, they should not be adjusted downwards. One reason for this, as explained by the Bath & North East Somerset Inspector amongst others, is that much of the demand for housing is not driven by job opportunities, and people who do not work also need somewhere to live.

5.4 To provide an integrated view of future jobs, population and housing, we have used the local economic forecasts produced by Experian Economics, together with additional analysis specially commissioned from Experian. The Experian results are discussed in the next section and shown in full at Appendix B.

Experian forecast

5.5 The Experian forecast provides an estimate of both labour demand (a relatively unconstrained estimate, based on long-term trends since 1997) and labour supply.

[39] Reference ID: 2a-018-20140306

[40] All adjustments referred here are policy-off

5.6 When labour demand exceeds supply, this means that the assumed population growth falls short of job-led demand, and the model provides an estimate of the shortfall, measured in numbers of jobs.

5.7 Where labour supply exceeds demand (for jobs) the model adjusts other labour market variables. For example increasing out commuting, increasing unemployment or suppressing economic activity rates.

5.8 In the Experian model, unlike demographic models including PopGroup, these variables are dynamic and move to reflect the wider economy and the sub regional labour market. So little reliance can be placed on the job number alone without understanding how these other variables have 'flexed'.

5.9 The baseline Experian model assumes the full delivery of SNPP 2012 population projections and the associated number of new homes. In return, the model shows an increase in jobs of 15,200. Over the plan period 2014-33 the number of workplace jobs[41] in the borough is forecast to grow from 119,700 to 134,300 jobs i.e. annual growth of 0.7%.

Labour market balance

5.10 The table below shows the forecast labour market balance, reconciling future jobs with future labour supply.

Table 5.1: Labour market balance 2014-33 – baseline scenario

Row	Change, 2014-33, thousands		Notes
1	Working age population	10.20	Persons aged 16-64 resident in Solihull
2	Resident labour force	11.00	Economically active residents (= working + unemployed)
3	Unemployment	-1.30	Unemployed residents
4	Resident-based employment	12.30	Working residents (2+3)
5	Net commuting	0.20	Net inflow from other local authority areas
6	Workplace-based employment	12.50	People working in Solihull (4+5)
7	Double-jobbing	2.70	People filling more than one job in Solihull
8	Workplace jobs	15.20	Jobs in Solihull (6+7)

Source: Experian

5.11 Over the plan period, the 15,200 additional jobs in Solihull are filled by:

[41] Workplace jobs are jobs located in the borough. There are slightly more workplace jobs than people who work in the borough, because some people have more than one job. Also the number of people working in the borough is not the same as the number of working residents, because many people do not work in the local authority area in which they live.

- An increase of 11,000 in the borough's resident labour force, the outcome of 10,200 net new working-age residents and an increase in overall economic activity rates;
- Activity rates are forecast to increase in the older age groups from 9% to 14.5%, due largely to the rising State Pension Age. Economic activity in the 16-64 groups is also predicted to increase but only by 4.2% over the period.
- A reduction in unemployment of 1,300, as the unemployment rate falls from 5.7% to 4.4%;
- An increase of 200 in net in-commuting (from 10.2% to 9.2% of the labour force);
- An additional 2,700 jobs are filled by double-jobbers i.e. people with more than one job.

5.12 These components of change are broad approximations – especially the double-jobbing figure, because it includes an 'errors and omissions' term to reconcile data from different sources.

5.13 In summary, if over the plan period, the population of the borough and neighbouring areas grows as per the ONS 2012 projection, the model estimates that workplace jobs in the borough will grow by 15,200 and the availability of labour will be sufficient to fill those jobs. However, if the population were to be lower, labour supply could become constrained.

5.14 Since Experian's baseline local forecast is integrated across the UK, the modelling also suggests that this balanced growth in Solihull is consistent with expected futures for neighbouring areas.

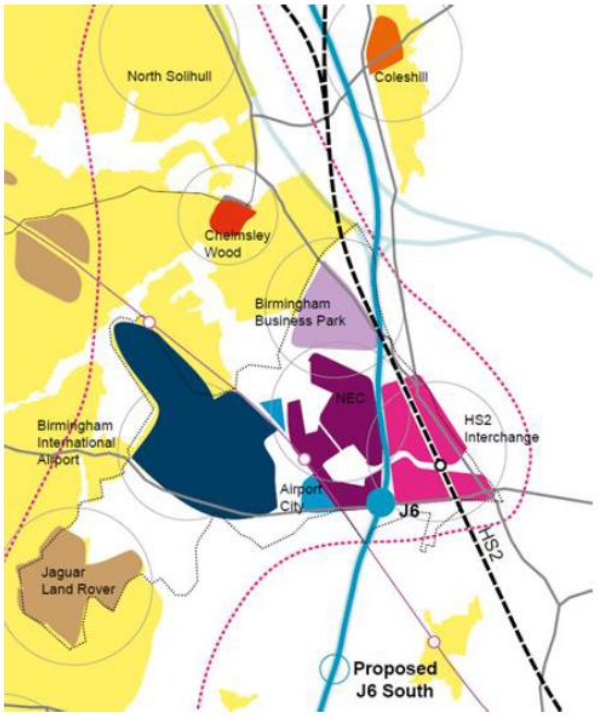
5.15 Since we undertook this modelling, as set out in Section 3, more recent official population projections have been made available. We do not think this requires any of the above modelling to be redone, largely because the overall population growth in the ONS 2014 projection is forecast to be higher than under the previous model.

The UKC Hub

5.16 In addition to the baseline Experian model, we commissioned them to produce a scenario take account of anticipated growth in the area known as the Hub which forms part of the wider UK Central (UKC) aspirations. The UKC Hub includes '*Birmingham Airport, the National Exhibition Centre (NEC), Jaguar Land Rover (JLR), Birmingham Business Park and the proposed new HS2 station*'[42] and is shown on the figure below.

42

Figure 5.1 The UKC Hub



Source: Figure 1.1, UK Central HS2 Interchange Station Growth Strategy Strategic Outline Case (Amion, 2015)

5.17 This commission was informed by the UK Central HS2 Interchange Station Growth Strategy Strategic Outline Case (May 2015) prepared for the Council by Amion Consulting ('the SOC').

5.18 The baseline Experian forecast above sets out job growth in Solihull without the UKC Hub coming forward. It is only net additional jobs associated with the UKC Hub that are relevant to building a robust jobs-led scenario for Experian. Furthermore, given the remit of this study, it is only permanent jobs that are relevant.

5.19 The SOC first estimates gross employment impact in the operational phase (i.e. permanent jobs) and then converts this into net additional jobs associated with the development. The SOC sets out that:

> *'in order to calculate the number of net additional jobs that could be created as a result of the Growth Strategy Development Programme, adjustments have been made in relation to displacement, multiplier effects and deadweight. An optimism bias rate of 20% has also been applied. The net additional impact has been calculated at the sub-regional level.'*[43]

5.20 The SOC estimates 16,500 gross additional jobs will be delivered in the UKC Hub between 2026 and 2045; this figure is separated into 13,800 office jobs, 1,600 light industrial/R&D jobs and 1,100 retail and leisure jobs. For our work, we needed to understand:

[43] Section 4.4

- what jobs are new?
- where those are new to?
- what is the phasing of those jobs?

5.21 Amion estimate that the net additional jobs (i.e. the 'new' jobs) figure over the same period is estimated to be 9,286. However, this figure relates to the whole of the GBSLEP sub-region and is not specific to Solihull i.e. while the additional jobs would be located in Solihull, the impacts of those additional jobs will be felt elsewhere in GBSLEP, not just through displacement but also through commuting patterns and migration. Therefore, to enable Experian to robustly model the effects of the UKC Hub, we needed to understand the impacts for Solihull separately from the impacts on the rest of GBSLEP, and for them to then model both.

5.22 To develop separate Solihull and 'rest of GBSLEP' estimates for net additional jobs, we first we had to understand the assumptions Amion had adopted to derive this GBSLEP-wide figure, so we worked with Amion directly to this. In relation to the whole of GBSLEP, they have derived the 9,286 jobs in the following way:

- With regard to leakage, the SOC notes that '*the Business Case has focused on where the jobs are expected to be created, not the residence of the people likely to access these new employment opportunities. As it is assumed that all of the gross jobs will be located within the sub-region, leakage will be therefore be 0%*'[44].
- In relation to deadweight, the SOC notes that '*as this assessment considers the impact over and above the benefits that will be generated through HS2, deadweight has been assumed to be minimal*'. A deadweight adjustment of 250 jobs is made to the retail and leisure jobs[45].
- In relation to multiplier effects, the SOC states that '*in order to calculate the potential multiplier effects, reference has been made to benchmarks set out within additionality guidance produced for the Department for Business, Innovation and Skills (BIS). This suggests that an appropriate composite multiplier at the sub-regional level for physical development capital projects might be around 1.46*'[46]
- With regard to displacement, Amion set out that '*although the Growth Strategy proposals will attract new national and international businesses to the sub-region and help to stimulate growth within the economy, there will also inevitably be a degree of competition with other developments and businesses within the sub-region. The level of actual displacement is likely to vary depending on the timing and nature of activity brought forward and the extent to which it complements other developments. Based on a review of the proposals and market context, and taking into account standard benchmarks, an overall displacement rate of 50% for office, light industrial and high tech/R&D/innovation uses has been applied. A*

[44] Pg. 17, footnote 2
[45] (ibid)
[46] (ibid)

higher rate of displacement (70%) has been assumed in relation to retail and leisure'[47].

Figure 5.2: UKC Hub net additional jobs in GBSLEP

Source: SOC

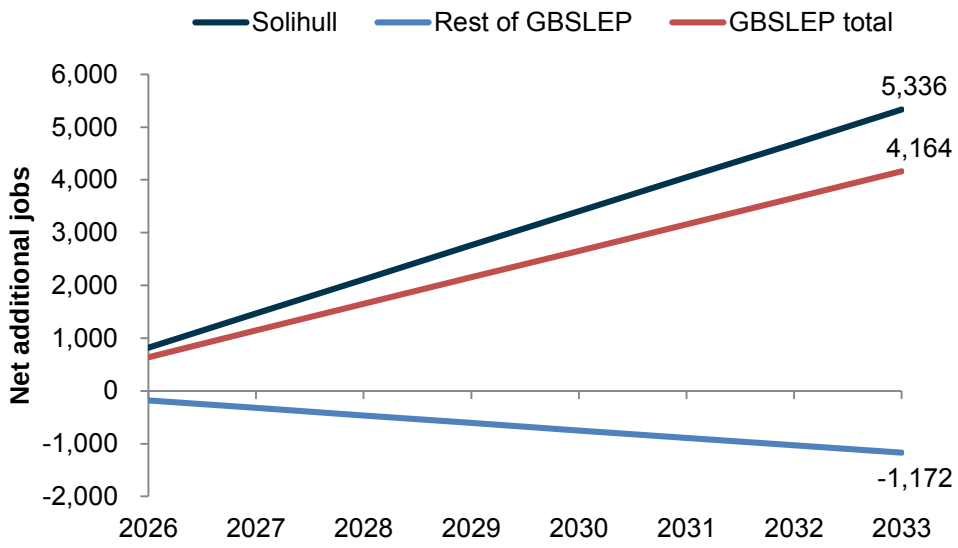
5.23 In developing our scenario, we worked with Amion to disentangle the number of jobs that would be new to Solihull and the number that would be new to the rest of GBSLEP. In relation to net new jobs Solihull, the starting point remains 16,500 gross new jobs because those jobs are located in Solihull. However, in relation to the assumptions, Amion advised us that we should adopt a lower multiplier of 1.2 and allow for a lower level of displacement of between 20-25% for the office and light industrial jobs and between 40-50% for the retail and leisure jobs.

5.24 Following the same process as Figure 5.1, this results in 11,900 net additional jobs to Solihull. This is balanced by the loss of 2,614 jobs from the rest of the GBSLEP area.

5.25 The final stage of this is look at the jobs that are relevant to the plan period i.e. to 2033. The figure below shows job growth across the plan period. This draws on the phasing of gross additional jobs at the UKC Hub that underpins the SOC. This phasing profile has been applied to the net additional jobs associated with the GBSLEP area.

[47] (ibid)

Figure 5.3: UKC Hub net additional jobs to 2033



Source: PBA/Amion

5.26 We asked Experian to run the UKC Hub scenario on this basis. The table sets out the forecast in 2033, firstly in terms of the total jobs and then in comparison to the baseline Experian forecast.

Table 5.2: Labour market variables Experian baseline and UKC Hub scenario in 2033

Variable Name	UKC Hub (000s)	Baseline vs UKC Hub (000s)
Labour Force	113.20	1.8
Labour Force - 16 to 64	104.50	1.7
Labour Force - 65 Plus	8.70	0.1
Population - retired	53.50	0.0
Population - student	44.40	0.0
Population - 16 Plus	187.10	0.0
Population - 16 to 64	128.00	0.0
Population - 65 Plus	59.10	0.0
Total Population	231.60	0.0
Working Age Population	133.70	0.0
Economic Activity Rate (%) - 16+	60.50	1.0
Economic Activity Rate (%) - 16 to 64	81.60	1.3
Economic Activity Rate (%) - 65 Plus	14.70	0.2
Economic Activity Rate (%) - Working Age	84.70	1.4
Workforce Jobs	139.20	4.9
Jobs Demand	139.70	5.4
Excess Jobs	0.50	0.5
FTE jobs	107.50	3.8

Variable Name	UKC Hub (000s)	Baseline vs UKC Hub (000s)
Workplace based employment	123.60	4.2
Residence based employment	109.00	2.0
Net commuting balance (inflow)	14.60	2.2
Unemployment	4.20	-0.2
Unemployment Rate	3.70	-0.2

Source: Experian

5.27 Experian make the following comments on this scenario:

> *'In this scenario, job demand has been increased in line with the Amion forecasts for the Retail & Leisure, Light Industrials and Office sectors in Solihull. We have also incorporated the corresponding reductions in job demand for the rest of the GBSLEP area.*
>
> *Some residents of Solihull who were inactive in the baseline case have joined the labour force in the scenario. The tighter labour market has encouraged more people to participate as their prospects of finding work have improved. This is particularly noticeable among those aged 16-64, meaning that overall participation rates rise to 60.4% by the end of the forecast period.*
>
> *The new potential jobs are filled not only by inactive residents, but also those who were unemployed in the baseline case and commuters from the rest of the West Midlands. However, this inflow into the labour market is not sufficient to fill all the potential jobs created, so workforce jobs increase by only 4,900 by 2033. Solihull's labour market is supply constrained.*
>
> *Many of the extra inward commuters have come from Birmingham. According to the 2011 Census, 73% of workers who commute from the rest of the GBSLEP into Solihull come from Birmingham. The boost in job demand in Solihull has actually increased labour supply in Birmingham more than in Solihull. The new outward commuters were unemployed in the baseline, lost their jobs due to displacement from the UK Central project, or were inactive in the labour market. However, as labour supply in Birmingham is five times larger in size than in Solihull, the effect is proportionally smaller.*
>
> *There has been little effect in most other areas of the GBSLEP. The displacement of jobs is small relative to the size of the GBSLEP area. The loss of jobs has discouraged some people in the labour market from participating, while a few others have found jobs elsewhere (potentially in Solihull). This has led to slightly lower unemployment rates in these other local authority areas, despite their job losses.*
>
> *The overall increase in jobs for the West Midlands is 4,200 by 2033.'*

5.28 Under this scenario therefore, initial Experian modelling indicates that the UKC Hub would result in Solihull's labour market becoming supply constrained i.e. the demographic projections would not support enough workers to match future job

growth. However, the size of the supply constraint of 500 should be viewed in the context of Solihull's projected total labour force in 2033 of 113,600.

5.29 Although the constraint is marginal, for completeness, we undertook a further stage of work with Experian and John Hollis to rebalance the labour market. In order to rebalance the model, it is necessary to understand the profile by age and gender of the additional population necessary to support job-led net migration of additional workers. This is because the additional population will not all be economically active. For the purposes of this scenario, we need to understand the total additional population.

5.30 The following table shows the rebalanced the UKC Hub scenario for Solihull[48]. As with the initial UKC Hub scenario, Experian have modelled all the GBSLEP districts to ensure migration and commuting assumptions are robust, but given the scope of our study, we look focus on Solihull.

Table 5.3: UKC Hub scenario – rebalanced labour market vs baseline in 2033

Variable Name	UKC Hub rebalanced (000s)	UKC Hub initial vs rebalanced (000s)	Baseline vs UKC Hub rebalanced (000s)
Labour Force	113.40	0.2	2.0
Labour Force - 16 to 64	104.70	0.2	1.9
Labour Force - 65 Plus	8.70	0.0	0.1
Population - retired	53.60	0.1	0.1
Population - student	44.50	0.1	0.1
Population - 16 Plus	187.50	0.4	0.4
Population - 16 to 64	128.30	0.3	0.3
Population - 65 Plus	59.20	0.1	0.1
Total Population	232.00	0.4	0.4
Working Age Population	134.00	0.3	0.3
Economic Activity Rate (%) - 16+	60.50	0.0	1.0
Economic Activity Rate (%) - 16 to 64	81.60	0.0	1.3
Economic Activity Rate (%) - 65 Plus	14.70	0.0	0.2
Economic Activity Rate (%) - Working Age	84.70	0.0	1.4
Workforce Jobs	139.70	0.5	5.4
Jobs Demand	139.70	0.0	5.4
Excess Jobs	0.00	-0.5	0.0
FTE jobs	107.50	0.0	3.8

[48] Please note, that in doing this modelling, Experian have assumed that Birmingham will meet its 2012-based projections or that they will be met elsewhere in the HMA.

Variable Name	UKC Hub rebalanced (000s)	UKC Hub initial vs rebalanced (000s)	Baseline vs UKC Hub rebalanced (000s)
Workplace based employment	124.10	0.5	4.7
Residence based employment	109.20	0.2	2.2
Net commuting balance (inflow)	14.90	0.3	2.5
Unemployment	4.20	0.0	-0.2
Unemployment Rate	3.70	0.0	-0.2

Source: Experian

5.31 In relation to this rebalanced the UKC Hub scenario, Experian have adopted the following assumptions:

- *unemployment rates and participation rates have been held constant*
- *additional population has been added in the 16-64 age group, allocated in each GBSLEP local authority area to reduce excess jobs to zero*
- *the areas in which the additional population has been added depend on the commuting ratios between the areas with excess jobs and the other areas in the Great Birmingham and Solihull area*
- *in converting jobs to population, account has been taken of double jobbing and the inactive and unemployed population*
- *the increase in the population within the 16-64 age group has also brought along an increase in population aged 65+ and <16 (dependents). This will generate additional number for jobs in the health and social care and education sectors*

Labour market balance – UKC Hub

5.32 The table below shows the components that make up the labour market balance under this scenario, compared to the baseline. The same categories are used as in Table 5-1.

Table 5.4: Labour market balance – the UKC Hub scenario vs baseline

Row	Change, 2014-33, thousands	Baseline	UKC Hub	Difference
1	Working age population	10.20	10.50	0.30
2	Resident labour force	11.00	13.00	2.00
3	Unemployment	-1.30	-1.50	-0.20
4	Resident-based employment	12.30	14.50	2.20
5	Net commuting	0.20	2.70	2.50
6	Workplace-based employment	12.50	17.20	4.70
7	Double-jobbing	2.70	3.40	0.70
8	Workplace jobs	15.20	20.60	5.40

5.33 Under the balanced UKC Hub scenario, over the plan period, the 20,600 additional jobs in Solihull are filled by:

- An increase of 13,000 in the borough's resident labour force, the outcome of 10,500 net new working-age residents and an increase in overall economic activity rates;
- Activity rates are forecast to increase in the older age groups from 9% to 14.7%, due largely to the rising State Pension Age; this is broadly comparable to the Experian baseline of 14.5%. However, economic activity in the 16-64 groups is predicted to increase more sharply than in the baseline – an increase of 5.5% over the period.
- A reduction in unemployment of 1,500, as the unemployment rate falls from 5.7% to 4.2% i.e. 0.2% lower than the baseline;
- An increase of 2,700 in net in-commuting (from 10.2% to 10.6% of the labour force) i.e. the proportion of in-commuting increases, vs the baseline scenario where in-commuting is expected to decrease as proportion of the workforce[49];
- An additional 3,400 jobs are filled by double-jobbers i.e. 700 higher than the baseline.

5.34 For the purpose of calculating the OAN, the rebalanced UKC Hub scenario results in an additional 400 people in 2033 over the baseline model. Experian comment that '*the results are as you would expect, there is a small increase in population, jobs and employment and a fall in excess jobs to zero*'.

Conclusion

5.35 In this section, we have tested the alignment of jobs and housing in Solihull against an independent, policy-off economic forecast. Our testing has shown that the labour market is not constrained and the area's demand for jobs can be met through the delivery of the 2012 SNPP.

5.36 We tested a further scenario to understand whether a jobs-led uplift was necessary to support the committed UKC Hub development. This initially showed that Solihull would be slightly labour market constrained by the end of the plan period but that the majority of jobs associated with the development could be filled by increased economic activity, reduced unemployment, increased in-commuting and greater double jobbing.

5.37 For completeness, we commissioned further demographic and economic modelling to balance future jobs with future labour supply. This results in a small increase in population in Solihull by the end of the plan period of 400 people.

5.38 During the course of this study, the 2014-based SNPP was released. This forecasts a higher population than the 2012 SNPP; we have not therefore rerun either the baseline or the UKC Hub scenario.

[49] In relation to the above commuting changes, Solihull forms a small part of a much larger HMA and is necessarily not self-contained. Some policy-off commuting changes are therefore to be expected.

5.39 Given we are recommending both a demographic adjustment and a market signals uplift on the 2014-based projections, we do not think that there is any justification for a separate economic uplift to address the UKC Hub, not least because it will only start to come forward at the very end of the period and the uncertainties surrounding long-term economic impact forecasting of this nature.

6 AFFORDABILITY

6.1 Part 2 of the SHMA focuses, principally, on the calculation on the level of affordable housing need (referred to as Affordable Need in this report) and the size and tenure of all dwellings required within the overall OAN for housing calculated in this part of the SHMA.

6.2 Paragraphs 22 to 29[50] of the Housing and economic development needs assessments section of the PPG detail how affordable housing need should be calculated. The Part 2 report sets out the calculation of this figure using locally available data for each individual sub-area within Solihull. The calculation indicates that there is a total need for affordable housing of 210 per year in Solihull.

6.3 On completion of the calculation of the need for affordable housing, the PPG says that:

> *'The total affordable housing need should then be considered in the context of its likely delivery as a proportion of mixed market and affordable housing developments, given the probable percentage of affordable housing to be delivered by market housing led developments. An increase in the total housing figures included in the local plan should be considered where it could help deliver the required number of affordable homes.'*[51]

6.4 The total annual affordable housing need in Solihull of 210 households per year represents 28.7% of the annual projected household growth in the borough between 2014 and 2033 (732 households per year as identified within the full OAN, including the SHNS uplift, calculations). This proportion of new housing as affordable appears achievable to deliver in Solihull and the Council can be confident that the affordable housing requirement can be met by the OAN (including SHNS uplift) identified.

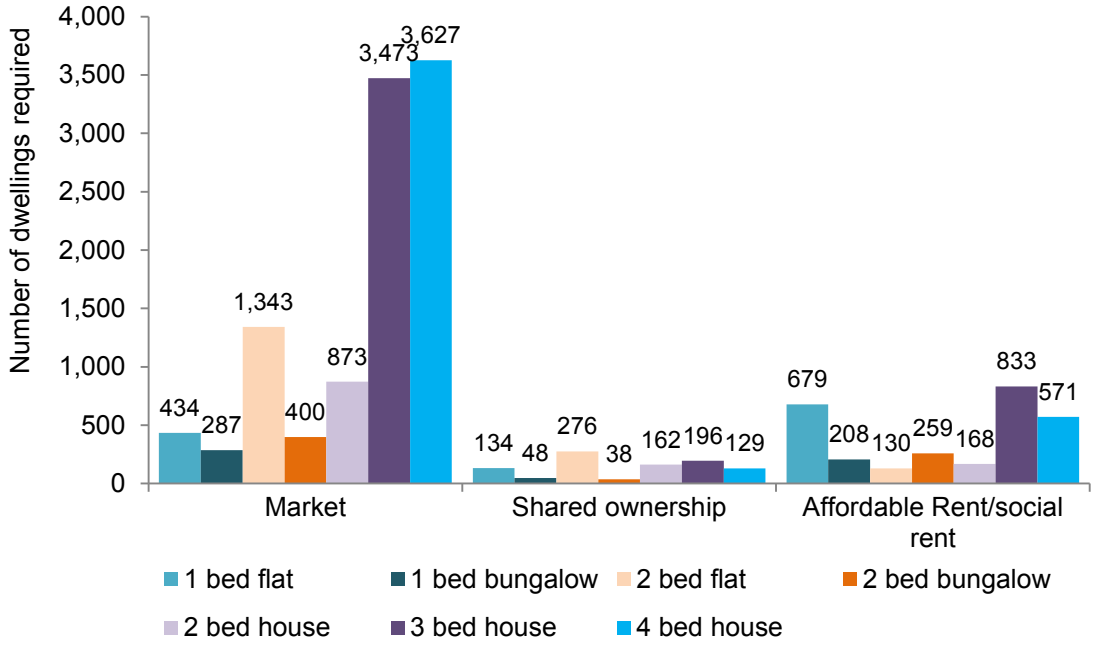
6.5 The Part 2 report also considered the impact of subgroups of the population on the housing target. There are no significant Ministry of Defence sites or universities in the Borough that have an impact on the housing market. In terms of specialist dwellings for older persons (Use Class C3b), it is evidenced that in Solihull an additional 355 affordable and 870 market sheltered and extra care housing units should be provided over the plan period within the identified OAN (including SHNS uplift).

6.6 To determine the size and tenure of the new housing required within the OAN (including SHNS uplift) to accord with paragraph 21 of the PPG, the long-term balancing housing markets (LTBHM) model outputs are used. The LTBHM model uses secondary data to determine the future demand for housing by size and tenure based on the profile of households resident in Solihull in 2033. This is then compared to the current housing stock and a profile of new accommodation required is determined. Figure 6.1 sets out the size and tenure requirement for the 14,278

[50] Reference ID: 2a-029-20140306
[51] Reference ID: 2a-029-20140306

dwellings (751 per annum) required over the remainder of the plan period (between 2014 and 2033).

Figure 6.1 Requirement for all new housing between 2014 and 2033



7 CONCLUSIONS

Objectively assessed housing need

7.1 The method applied in this report follows that outlined in the Planning Advisory Service Technical Advice Note 'Objectively Assessed Housing Needs and Housing Targets'. This was first published in June 2014 and was updated in July 2015 to reflect emerging best practice.

7.2 It also follows the stages set out in the Planning Guidance to arrive at the 'overall housing needs figure' at paragraph 2a-020.

Defining the HMA (PPG paragraph 2a-008)

7.3 Previous work undertaken in the Greater Birmingham area confirms that Solihull is located within the Greater Birmingham HMA.

7.4 Reflecting the close links between Solihull and the rest of the Greater Birmingham HMA, duty to co-operate discussions are well advanced.

Identifying the demographic starting point (PPG 2a-015)

7.5 With the HMA established, PBA tested the wide range of demographic data to identify the demographic starting point. This included producing alternative trend-based scenarios based on different periods. The most recent official projection shows need arising of 11,903 dwellings between 2014 and 2033 (626 dpa). We recommend using this as the demographic starting point.

Adjustment to the demographic projection (PPG 2a-017)

7.6 Paragraph 2a-017 of the PPG states that:

> *'The household projections produced by the Department for Communities and Local Government are statistically robust and are based on nationally consistent assumptions. However, plan makers may consider sensitivity testing, specific to their local circumstances, based on alternative assumptions in relation to the underlying demographic projections and household formation rates'*

7.7 In Section 3 we tested the use of the 2012 headship rates for Solihull. This testing showed that they remained a robust set of data. We have also reviewed the 2014 headship rates and confirmed that, on the basis they introduce only two new years of data to a long-term trend, do not alter the conclusion that they are a robust data set to use in our projection.

7.8 As set above, we tested a number of alternative projections. That testing indicated that both the 2012 and 2014 CLG projection will result in higher population growth than the trend-based scenarios.

7.9 Because of Solihull's role within the wider Greater Birmingham HMA, and the outputs from the SHNS, it is pragmatic to ensure consistency with the higher 2012-CLG

projections (which remain those referred to in the current version of the PPG). This adjustment of 1,002 dwelling over the plan period will address any future gap.

7.10 However, the PPG does not provide any guidance as to whether this uplift should be addressed as part of the OAN or whether it is sufficient to make this adjustment through the housing target. Making these adjustments shows need for 679 dpa in Solihull from 2014 onwards; however, this figure must then be considered in the context of whether any employment or market signals adjustments are required.

How should employment trends be taken into account? (PPG 2a-018)

7.11 The PPG advises that:

> *'Where the supply of working age population that is economically active (labour force supply) is less than the projected job growth, this could result in unsustainable commuting patterns (depending on public transport accessibility or other sustainable options such as walking or cycling) and could reduce the resilience of local businesses. In such circumstances, plan makers will need to consider how the location of new housing or infrastructure development could help address these problems.'*

7.12 To address this paragraph of the PPG, we used an independent and 'policy off' economic forecast.

7.13 The baseline Experian forecast does not suggest that Solihull is labour market constrained so that providing the number of new homes and population would not result in 'unsustainable commuting' or 'reduce the resilience of local businesses'.

7.14 We also asked Experian to model a jobs-led scenario related to the UKC Hub. This identified a slight imbalance in the labour market. Further modelling undertaken by Experian to rectify this imbalance suggested that this would only result in a further 400 people across the plan period.

7.15 In the context of the overall population in 2033, we do not think that this requires adjustment to the OAN, particularly given the alternative demographic analysis undertaken clearly shows that the demographic starting point we have adopted is extremely robust.

Market signals (PPG 2a-019)

7.16 Section 4 of this study considered market signals and past rates of housebuilding. Our analysis suggests that Solihull is becoming less affordable. We therefore suggest that an adjustment is needed to take account of market signals.

7.17 The PPG does not specify the size of this adjustment, saying only that it should be 'reasonable', and authorities should monitor the situation and review supply accordingly. But EiP Inspectors' decisions on three occasions have used rules of thumb as follows:

- Modest under-provision/market pressure (Uttlesford, Eastleigh) 10%
- Significant under-provision / market pressure (Canterbury) 30%.

7.18 In this case, we consider the evidence in Solihull points to modest pressure i.e. while an adjustment is required, because against some of the market signals do not point to pressure. We therefore recommend a 10% uplift.

7.19 Because we consider that housing market was showing signs of pressure in the first three years of the SHNS period i.e. the three years before the plan period, we think it is robust planning to apply the market signals adjustment to the SHNS-identified requirement for these years.

7.20 This 10% uplift equates to 1,373 dwellings over the period 2014 to 2033.

Recommendations

7.21 The OAN for Solihull is either 13,094 or 14,278 dwellings (689 or 751 dpa) over the period 2014 to 2033.

7.22 Both these numbers have been revised upwards to reflect a market signal adjustment and, working with Experian, we have tested whether this number of homes provides sufficient labour to meet economic needs. The higher number includes a further upward adjustment because Solihull has chosen to adopt a different base date for its new plan from its nearest and most relevant HMA neighbour (Birmingham). However, the PPG is not specific as to whether this adjustment should form part of the OAN for the plan period or whether it can be addressed through the housing target as a policy-on adjustment, merely that it should be addressed.

7.23 Because Solihull has not delivered enough new homes to meet its OAN in full, since 2011, including the 'gap' between the base date of the Birmingham Plan and the emerging Local Plan Review (see section 3), SMBC ought to consider whether it is able to frontload the land supply to allow the market to address any unmet need as quickly as possible. Additional deliverable supply ought to be provided from the plan adoption to cover for any 'gaps' in addition to meeting the minimum reservoir of land required in the NPPF.

7.24 With regard to the UKC Hub, given the phasing of development and based on Amion's assumptions on the delivery of net additional jobs across the GBSLEP area, the number of jobs coming forward over the course of the plan period is relatively limited. Many of the new jobs attracted to the UKC Hub are displaced from elsewhere in the area and do not require net additional labour.

7.25 Experian have tested whether more new homes and more labour is needed in Solihull to facilitate the UKC Hub. Solihull is a minor part of a much larger functional economic market area and the Experian modelling has demonstrated that the additional labour can be sourced 'policy off' from within the Solihull and wider HMA / FEMA area without any further uplift in OAN for Solihull.

7.26 But this needs to be kept under review; towards the end of the plan period the UKC Hub may generate a higher demand for new jobs than Amion have estimated. The labour market in the FEMA may also tighten more than the Experian forecast which may mean a labour supply shortage emerges and/or the intentions for the UKC Hub are upwardly revised which may require a housing / labour supply response.

7.27 So we recommend that the Council keep this under review, chiefly because of the timescales involved and the fact that the development itself or its delivery programme may change.

Relationship to an updated assessment of affordable need

7.28 The household projections, corrected for market signals, and if met in full, provide for the full market demand for all housing regardless of tenure. In the PPG this is sometimes referred to as the 'overall housing figure' and is reached by paragraph 20 of the PPG method[52]. This is the need for all housing, including both market and affordable housing.

7.29 The PPG also requires a separate calculation of the housing needs for certain groups of people starting in paragraph 21[53]. This flows from paragraph 20 and provides a 'breakdown' of the overall housing needs figure. This is a disaggregation of the overall requirement for housing.

7.30 While affordable housing need (calculated following paragraphs 22 to 29 of the PPG) is not a specific component of the 'overall housing figure' (following paragraphs 14 to 20 of the PPG), the SHMA is required to consider affordable housing need because it can be used to evidence an upward adjustment to the OAN 'where it could help deliver the required number of affordable homes'[54]. However, case law[55] has also confirmed that when setting the OAN, affordable need does not need to be met in full.

7.31 HDH Planning and Development Ltd, as experts in affordable housing, have provided this in a separate and self-contained Part 2 report; a summary of that report is provided at Section 6. The affordable need has been calculated at 28.7% of the annual projected household growth in the borough; this proportion of new housing as affordable appears to be achievable in Solihull. So, having considered affordable needs, no adjustment to the OAN is required.

Unmet cross-boundary need

7.32 The OAN above does not consider any additional homes SMBC might provide to address unmet need from elsewhere in the HMA.

7.33 However, in setting the housing target, as set out in Section 4, there is scope for SMBC to offset some of this unmet cross-boundary need against the market signals adjustment. This is a policy-on decision for SMBC.

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[52] Reference ID: 2a-020-20140306 - assuming the PPG method of assessing housing need is followed sequentially

[53] Reference ID: 2a-021-20160401

[54] Reference ID: 2a-029-20140306

[55] Borough Council of Kings Lynn and West Norfolk v Secretary of State for Communities and Local Government and Elm Park Holdings Ltd [2015] EWHC 2464 (Admin) para. 35

Post-plan housing need

7.34 This report considers the OAN for Solihull up to 2033. But housing need is a continuing process; it will continue to arise post-2033. It may be prudent for this plan to start considering long-term policy responses to meet needs post-2033.

7.35 This is particularly the case given the uncertainty surrounding the UKC Hub. New settlements and major new urban extensions have a long lead-in time and it may be sensible to start forward planning sustainable supply solutions now to ensure infrastructure is in place when the homes are needed.

APPENDIX A DEMOGRAPHIC DATA

Solihull: New Demographic Projections

Version 2: 3 May 2016

John Hollis

1. Background

1.1 This report looks at recent demographic changes (2001-14) in Solihull, gives the results of recent ONS/CLG population and household projections[1] and compares them with alternative projection scenarios based upon the most recent ONS mid-year estimate (2014) and various migration patterns in years prior to 2014. In particular the ONS/CLG 2012 projection is compared to a projection based on migration trends between 2001 and 2014.

2. Demographic Changes 2001-14

2.1 Since mid-2001 the population of Solihull has been estimated to have risen by 10,300 to reach 209,900 at mid-2014. This increase has been made up of a gain of 3,900 due to natural change (births to resident women being more than deaths of residents) and a net migration gain of 6,400 persons. The net migration figure includes 'other changes' including a trivial 'unattributable population change' (UPC) loss of 96 persons[2]. If UPC and other changes, such as armed forces and prisoners, are ignored there was an estimated net migration gain of 6.500, as seen annually in Table 1. Net migration within the UK was estimated to have been a gain of 5,100 and there was an estimated net migration gain from Overseas of 1,400.

2.2 Over the thirteen year period being studied the level of natural change has moved from annual losses to annual gains, due to the overall rise in the annual number of births coupled with near constant numbers of deaths (see Figure 1). Net migration has been the main driver of population increase, being positive in all years except 2011-12. There are two notable peaks in 2007-8 and 2012-13. Net Overseas migration was highest between 2001 and 2006 and has been negative in some later years. Net UK migration has generally been positive with was the major cause of the two spikes mentioned above. Other changes, which apart from UPC include net movements of prisoners, armed forces and boarding pupils, was a loss of just 123 people over the 13 years. The net result is that the population has risen strongly in all years since 2001.

[1] ONS and CLG population and household estimates and projections are © Crown Copyright.

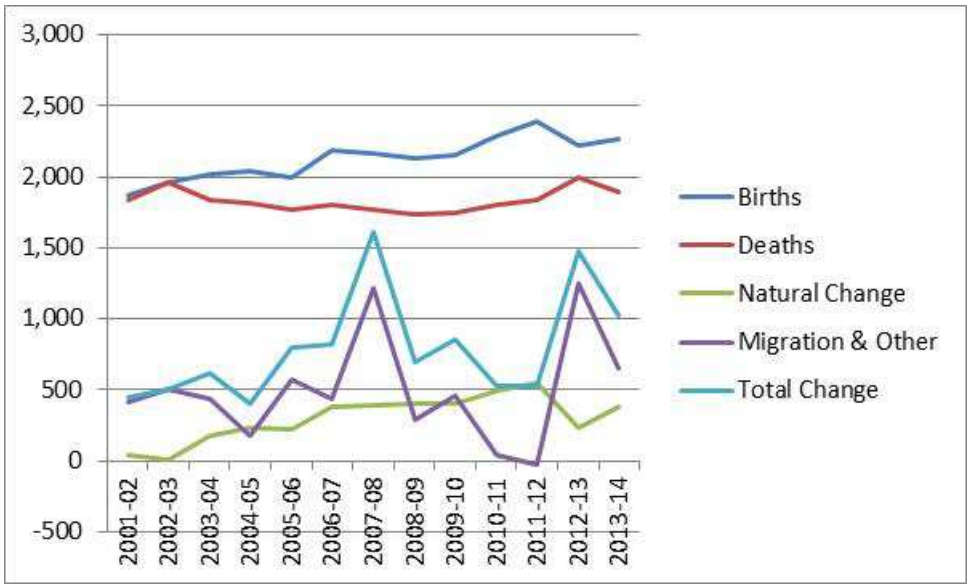
[2] ONS has stated that the 'unattributable' losses (or gains in other authorities), often referred to as UPC, may be due to errors in either the 2001 or 2011 Censuses, giving rise to errors in the mid-year estimates of those years, or errors in either the UK or Overseas migration calculations or both. Compared to nearly all local authorities in England UPC estimated for Solihull is very low. This implies good recording of population at both censuses and reliable migration estimation.

Table 1: Solihull: ONS mid-year estimate change analyses 2001-14.

	Start Population	Births	Deaths	Natural Change	Migration UK Net	Migration Overseas Net	Other	Migration & Other	Total Change	End Population
2001-02	199,574	1,876	1,833	43	17	368	26	411	454	200,028
2002-03	200,028	1,964	1,957	7	105	408	-12	501	508	200,536
2003-04	200,536	2,015	1,837	178	256	170	13	439	617	201,153
2004-05	201,153	2,044	1,815	229	-159	349	-15	175	404	201,557
2005-06	201,557	1,994	1,775	219	458	136	-19	575	794	202,351
2006-07	202,351	2,185	1,809	376	407	56	-20	443	819	203,170
2007-08	203,170	2,165	1,774	391	1,129	105	-17	1,217	1,608	204,778
2008-09	204,778	2,134	1,730	404	452	-137	-27	288	692	205,470
2009-10	205,470	2,149	1,749	400	649	-146	-44	459	859	206,329
2010-11	206,329	2,291	1,802	489	40	14	-16	38	527	206,856
2011-12	206,856	2,386	1,839	547	-67	51	-7	-23	524	207,380
2012-13	207,380	2,219	1,990	229	1,328	-95	19	1,252	1,481	208,861
2013-14	208,861	2,268	1,890	378	529	126	-4	651	1,029	209,890

Source: ONS © Crown Copyright

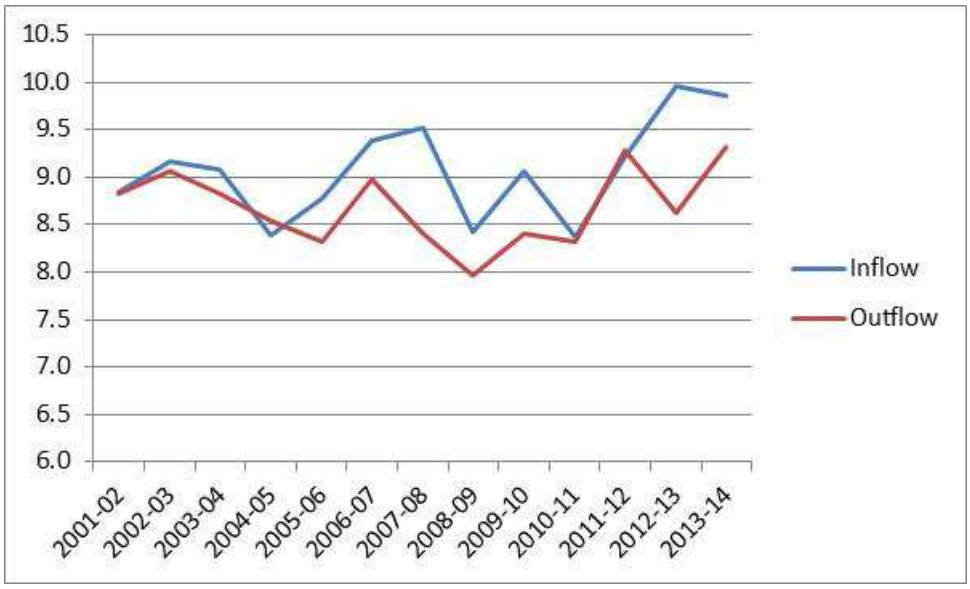
Figure 1: Solihull: Births. Deaths, Natural Change, Migration & Other and Total Change 2001-14: ONS mid-year estimate change analyses



Source: ONS © Crown Copyright

2.3 Two aspects of population change require more detailed analysis; gross migration movements, both within the UK and with Overseas.

Figure 2: Solihull: Gross UK Migration Flows 2001-14: ONS mid-year estimate change analyses (thousands)



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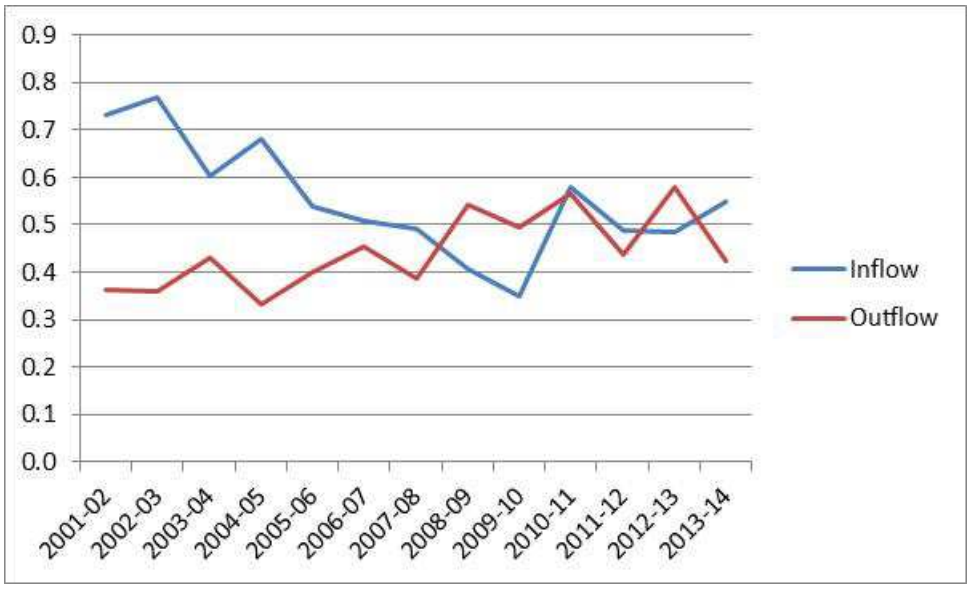
2.4 The gross outflow from Solihull to the rest of the UK has averaged around 8,700 per year and has shown a rising trend since 2008-09. The gross inflow has been more variable, rising unevenly from below 8,500 in 2004-05 to 10,000 in 2012-13: averaging 9,100 over the period. The small decline in flows after 2008 is common within the UK as a response to the recession. However effects on Solihull appear to be less than in many other locations.

2.5 The volumes of migration with Overseas are estimated to be much less than those with the rest of the UK, averaging around 500 in each direction each year. There was a peak inflow between 2001 and 2005. This includes the beginning of the period when the eight Eastern European countries joined the EU. Since the peak of 770 in 2002-03 the estimated inflow has declined to around 500 a year since 2010-11. Since 2005 the net flows have varied between +100 and -100.

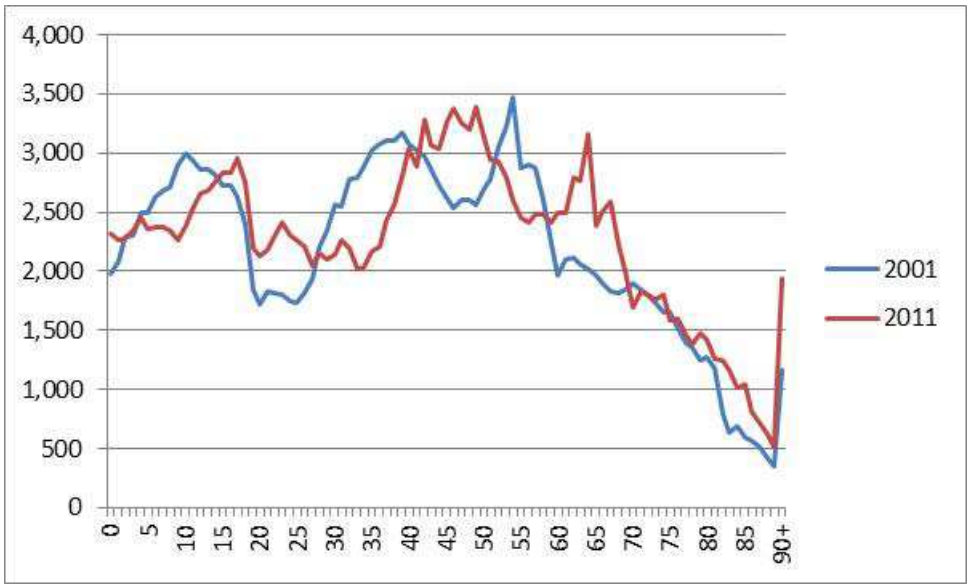
Figure 3: Solihull: Gross Overseas Migration Flows 2001-14: ONS mid-year estimate change analyses (thousands)



Source: ONS © Crown Copyright

2.6 Figure 4 shows that Solihull's population has aged over the last inter-censal decade, particularly with an increase in people in their 60s and 80s. There are also increases of mature workers in their 40s as well as teenagers and those in their 20s.There are reductions at all ages between 4 and 14, but some gains for infants. Some of these difference, notably the spike at age 64 in 2011, are partly due to the ageing on of the population resident in 2001, but others, notably the growth in persons in their 40s also include net migration effects.

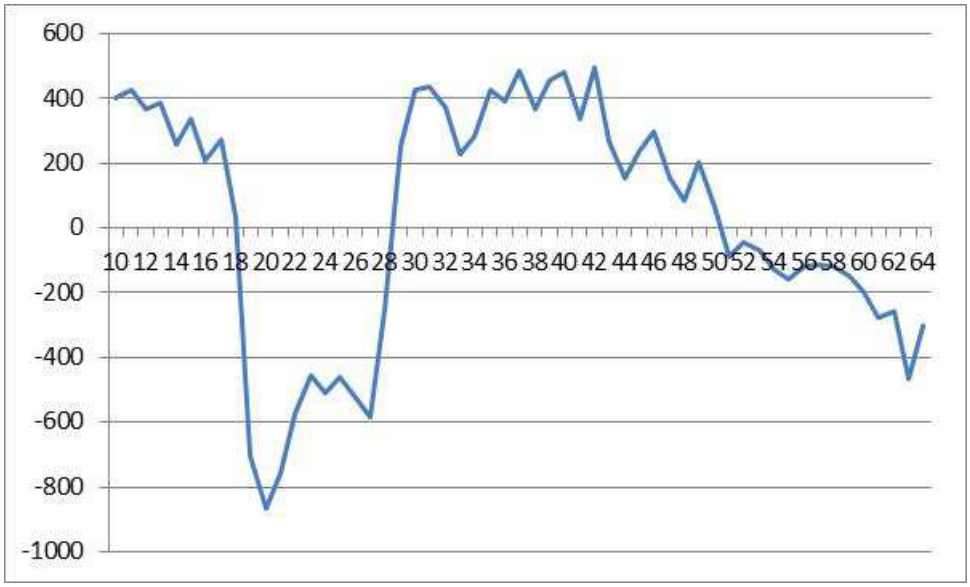
Figure 4: Solihull: Detailed age structure 2001 and 2011. ONS mid-year estimates



Source: ONS © Crown Copyright

2.7 Figure 5 shows the net migration pattern of Solihull over the decade 2001-11. The data are obtained by differencing the ONS 2001 and 2011 mid-year estimates with an allowance for 10 years difference in age, ie 20 year olds in 2011 less 10 year olds in 2001. The figures will therefore also contain the small impact of deaths in the resident population aged 0-59 at 2001 over the following decade. As all ages are as at 2011 the average age of migration would be about 5 years younger than shown by the x-axis scale, though relatively little migration tends to occur before age 18.

Figure 5: Solihull: Net Migration 2001-11 by ages 10-69 at 2011. ONS mid-year estimates



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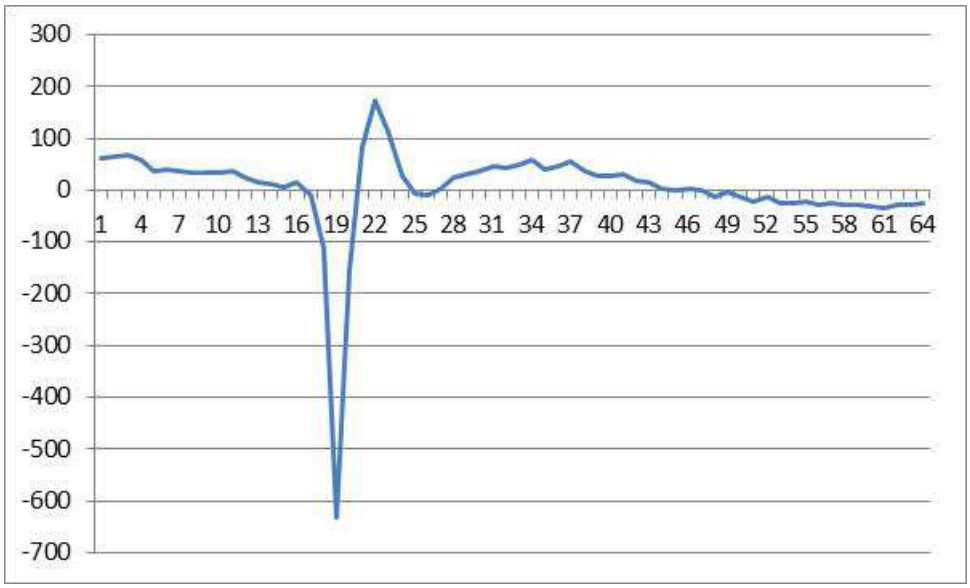
2.8 The net impact has been a gain of children, a large net loss of students but gains of returning students and younger workers from the mid-20s through the 40s. There is then a net loss in the late 50s and 60s. Solihull has therefore successfully attracted a working age population and their families while, maybe temporarily, losing persons of student ages.

2.9 Figure 6 takes a different view of net migration, presenting the average annual levels by age over the period 2001-14. These data also exclude the minor impact of annual deaths by age 64 of the resident population. The figure clearly confirms the net outflows at the student ages (18-20) followed by a significant 'graduate' return flow in the early 20s and an inflow of workers up to the mid-40s.

Figure 6: Solihull: Average Annual Net Migration 2001-14 by age. ONS mid-year estimates



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3. ONS/CLG 2012-based projections

3.1 The ONS 2012-based subnational population projection was produced based on migration change, excluding UPC, over the period 2006/7-12. Table 2 shows the base data that was available for use in the projection. UK migration was based on the previous five years and Overseas migration on the previous six – hence the missing cells in the table.

3.2 Judged solely on the projection output for 2012-13 (which is mainly available only rounded to the nearest 100) ONS may have slightly exaggerated the net inflow from the rest of the UK compared to the averages.

3.3 The projected gross flows of overseas migrants appear to be a little low but the net result is close to the average of the previous six years.

Table 2: Solihull: Gross Migration Flows 2006-12 and ONS SNPP 2012-13. ONS mid-year estimate change analyses and SNPP results.

	UK In	UK Out	UK Net	Overseas In	Overseas Out	Overseas Net	Total Net
2006-07				509	453	56	
2007-08	9,527	8,398	1,129	492	387	105	1,234
2008-09	8,421	7,969	452	406	543	-137	315
2009-10	9,059	8,410	649	349	495	-146	503
2010-11	8,366	8,326	40	579	565	14	54
2011-12	9,212	9,279	-67	487	436	51	-16
Average	**8,917**	**8,476**	**441**	**470**	**480**	**-10**	**431**
SNPP							
2012-13	*9,200*	*8,700*	*500*	*400*	*400*	*0*	488

Source: ONS © Crown Copyright

3.4 The ONS 2012 SNPP shows net migration to Solihull rising from 488 in 2012-13 to peak at 779 in 2020-21 and reaching 719 in 2036-37. Total projected net inflow was 17,200, of which 14,100 was between 2014 and 2034 – an average rate of a little over 700 per year. Over 2014-33 the population is projected to increase by 21,724 to reach 230,948.

3.5 The conversion of the population to households by CLG shows a growth of 11,837 households over 2014-33 to reach 99,265 in 2033. As Solihull has a very low vacancy level (2.49% at the 2011 Census) the projected growth in households is equivalent to a requirement for 12,139 homes or 639 per year, with a constant vacancy level.

3.6 Figure 7 shows the projected changes to Solihull's age structure. The main feature is the increase at all ages over 60 with the exception of 67 due to the survivors of the extremely large cohort born around 1947. There are also increases for school age children and around age 40 but reductions in the key working ages from the mid-40s to mid-50s.

Figure 7: Solihull: Age Structure, 2014 and 2033, ONS SNPP 2012

Source: ONS © Crown Copyright

4. Alternative Projection Scenarios

4.1 Three projection scenarios have been developed. All use the 2014 ONS population estimates as the base and are based on recent migration levels. The first uses all migration estimated since mid-2001 (ie 2001-14), the second uses the latest ten-year period (2004-14) and the third the latest five-year period (2009-14). All include UPC as additional net migration, but for Solihull this is a trivial difference.

4.2 Figure 8 shows the resulting populations and Figure 9 shows the resulting net migration. All recent projections show a continuing growth in the population but a slightly different rates dependent upon the base period chosen for migration. Of these four the ONS 2012 projection has the highest trajectory and the 2001-14 Trends projection the lowest. At 2014 the range is from 227.2 thousand to 231.9 thousand. Since 2001 net migration has always been positive – with the trivial exception of 2011-12 – but has shown remarkably volatility with two large peaks of around 1,200 a year. Therefore there will be different outcomes depending upon which period is chosen as a base for migration data. For ONS the base is effectively five years given that UK migration is much more significant than international flows. The 2009-14 Trends also includes only five years. Both the ONS 2012 and the 2009-14 Trends include one of the spikes of migration in their bases as well as two very low years. The longer trends also include both spikes as well as years before 2006 with much more steady 'middling' levels.

Figure 8: Solihull: Population: 2001-37: Projections compared (thousands)

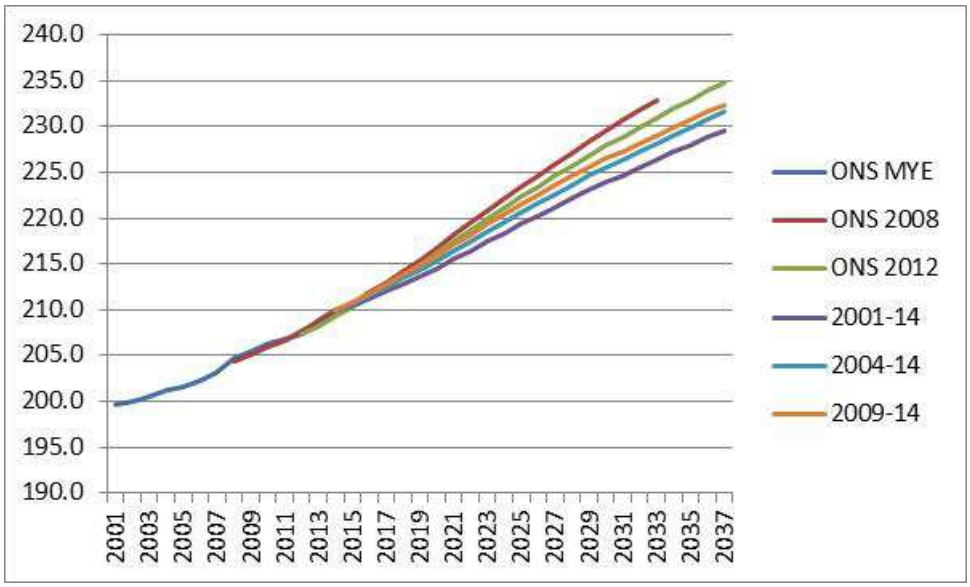


Figure 9: Solihull: Net Migration and Other Changes: 2001-37: Projections compared (thousands)

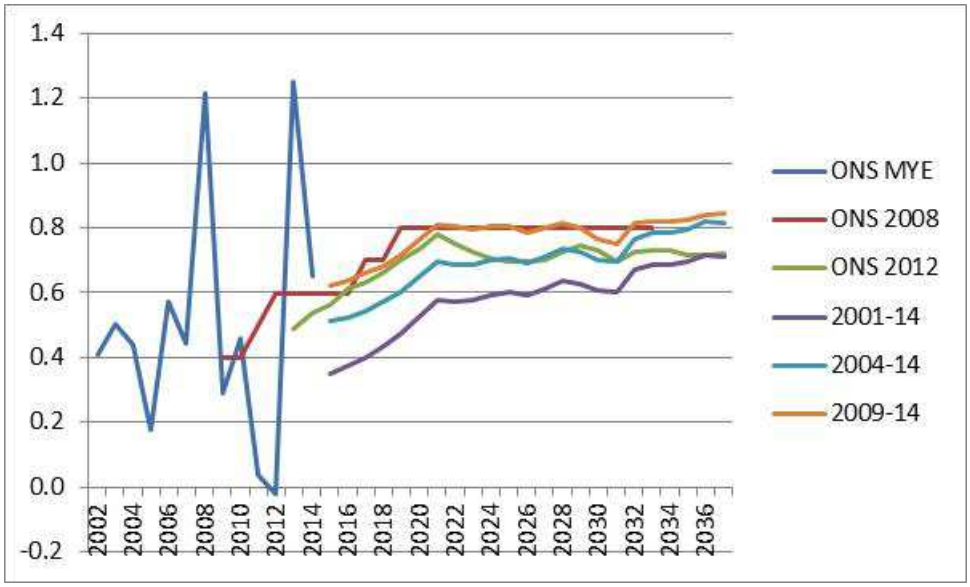
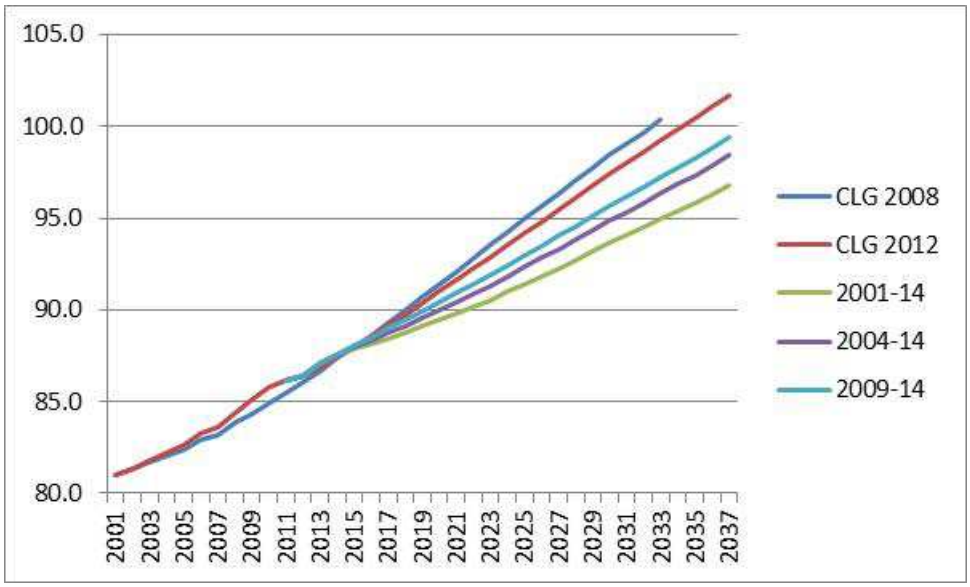


Figure 10: Solihull: Households: 2001-37: Projections compared (thousands)



4.3 Figure 10 shows the projections of households. In general the longer the period of migration used as a base the lower the future number of households. This is even with the same CLG 2012 household representative rates being used in each projection. The reasons for the differences lie with two features; the size of the population at 2037 and its age structure. Different migration periods have different age structures of migrants. In years before the recession the net migration flow to Solihull was composed of proportionately more working ages and therefore relatively fewer older persons. As older persons have overall higher household representative rates (and lower average household sizes) the more recently based projections with more elderly amongst the migrants will show a higher housing requirement.

4.4 The results are summarised in Table 3 in which the conversion of all four projections from households to homes uses the same vacancy rate – 2.49% from the 2011 Census.

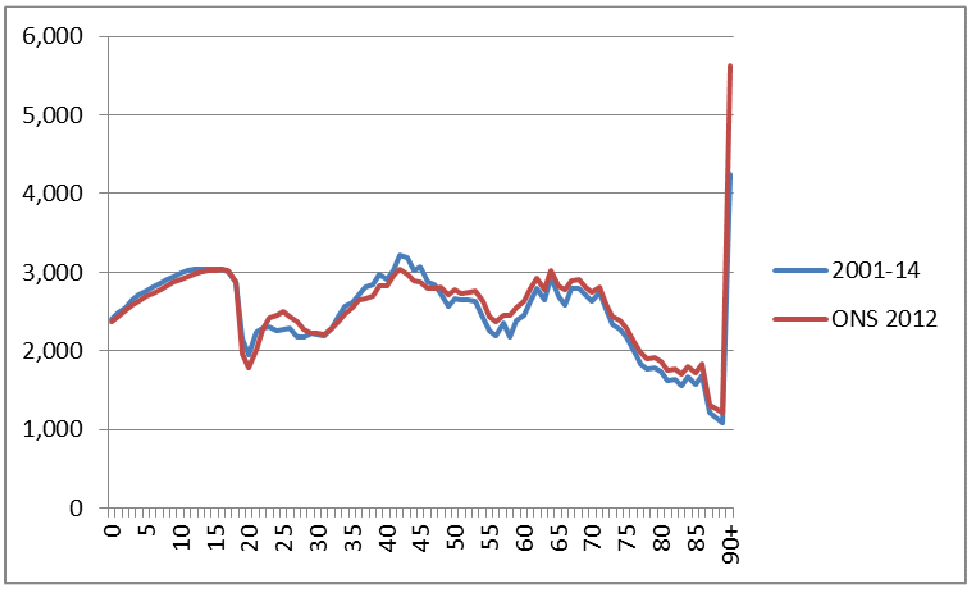
Table 3: Solihull: Projections Summary (mainly thousands)

	ONS/CLG 2008	ONS/CLG 2012	2001-14 Trends	2004-14 Trends	2009-14 Trends
Population (k)					
2001	199.6	199.6	199.6	199.6	199.6
2011	206.7	206.9	206.9	206.9	206.9
2014	209.7	209.2	209.9	209.9	209.9
2016	211.8	211.4	211.3	211.6	211.8
2021	218.1	217.5	215.5	216.4	217.1
2026	224.6	223.4	220.3	221.6	222.6
2031	230.7	228.9	224.7	226.4	227.3
2033		230.9	226.4	228.2	229.1
2001-14	10,126	9,650	10,316	10,316	10,316
2014-33		**21,723**	**16,473**	**18,294**	**19,180**
pa		**1,143**	**867**	**963**	**1,009**
Households (k)					
2001	81.0	81.0	81.0	81.0	81.0
2011	85.5	86.2	86.2	86.2	86.2
2014	87.3	87.4	87.6	87.6	87.6
2016	88.6	88.6	88.2	88.4	88.5
2021	92.1	91.6	89.8	90.4	90.9
2026	95.7	94.8	91.8	92.8	93.5
2031	99.1	98.0	94.1	95.3	96.2
2033		99.3	94.9	96.3	97.2
2001-14	6,331	6,425	6,576	6,576	6,576
2014-33		**11,837**	**7,361**	**8,770**	**9,627**
pa		**623**	**387**	**462**	**507**
Homes					
2014-33		**12,139**	**7,549**	**8,994**	**9,872**
pa		**639**	**397**	**473**	**520**

4.5 Each of the Trends projections shows lower populations and lower numbers of households than do the ONS/CLG 2012 projections. The lowest is the 2001-14 Trends projection that implies the requirement to supply an additional 7,549 new homes over the 19 years.

4.6 The reason for the lower housing requirement – apart from the 2001-14 Trends projection having 5,250 fewer persons at 2033 is the different age structure as a result of using a longer period of migration in the base. Figure 11 compares the age structure of the ONS 2012 projection with the 2001-14 Trends projection.

Figure 11: Solihull: Age Structure in 2033: Projections compared

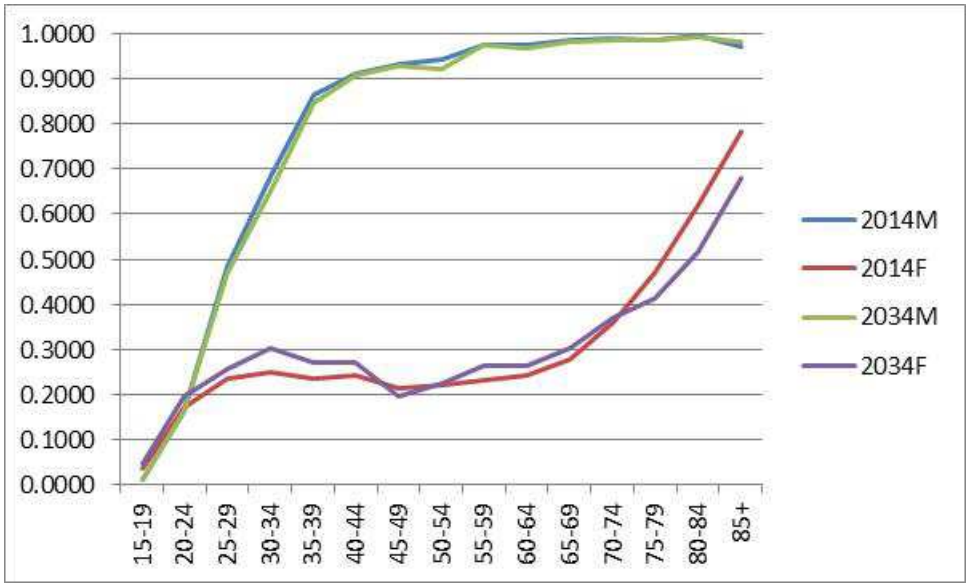


4.7 Figure 11 shows that the age structures of the two projection s are not very different, but the differences are significant. The 2001-14 Trends projection has higher populations at ages 0-15, 19-22 and 32-47 compared to the ONS 2012 SNPP, which has 6,400 more persons over age 50. This clearly illustrates the influence of flows before the recession that included more people of working age from both the UK and Overseas.

4.8 The CLG 2012 projection has 4,300 more households at 2033 than the 2001-14 Trends projection. Of this total 4,750 more were represented by persons aged over 60. The 2001-14 Trends projection only showed more households (650) represented by persons aged 30-44.

Appendix 1: Solihull Household Representative Rates

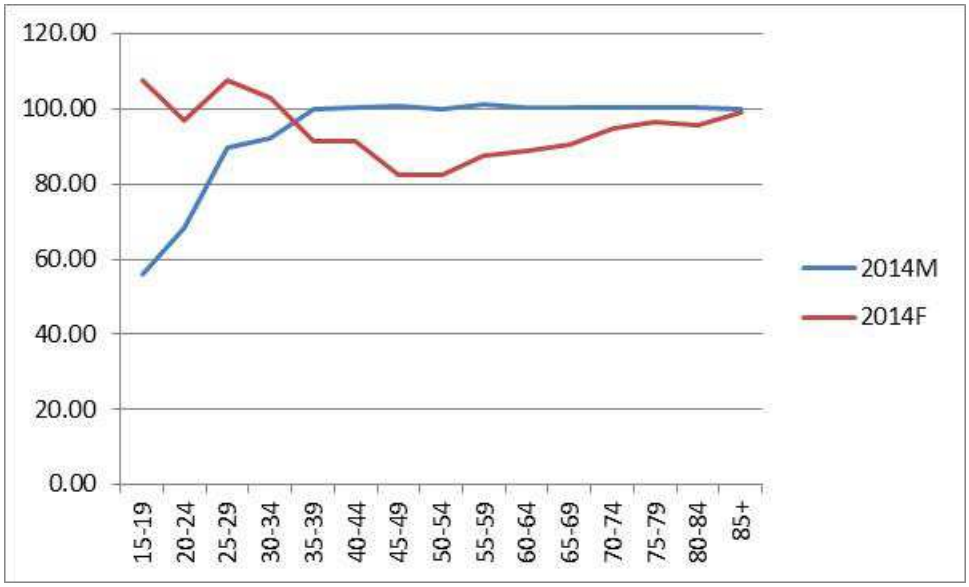
Figure A1: Solihull: Household Representative Rates by age and gender, 2014 and 2034. CLG 2012 Household projections



Source: CLG © Crown Copyright

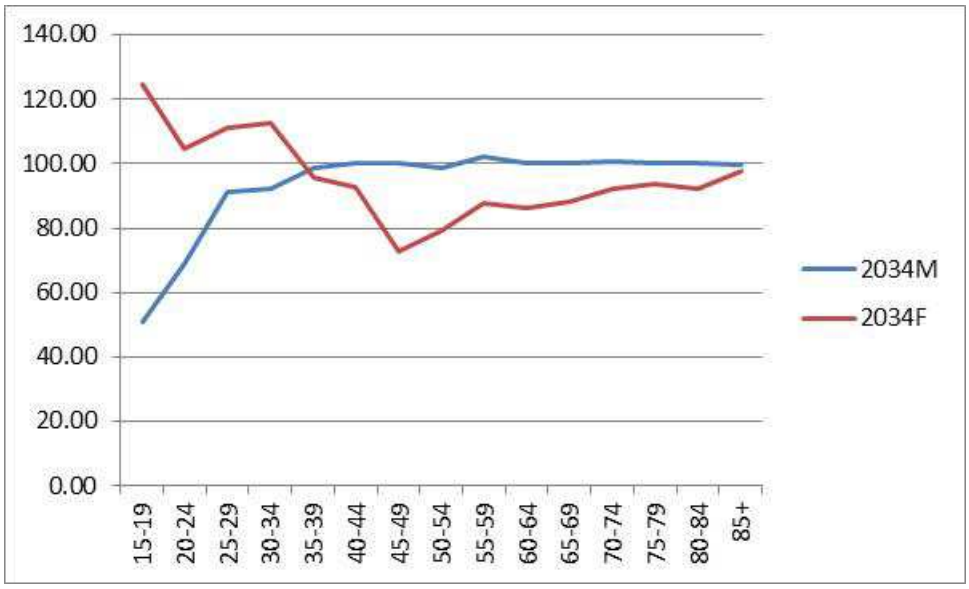
Figure A1 shows that while household representative rates (HRRs) for males were virtually unchanged over the projection there were some significant differences for females. HRRs increased at lower ages but declined at ages over 75. This is largely a result of improved male survivorship that leaves fewer widows and also reduced years of widowhood.

Figure A2: Solihull: Household Representative Rates by age and gender, 2014 compared to England. CLG 2012 Household projections (percentages)



Source: CLG © Crown Copyright

Figure A3: Solihull: Household Representative Rates by age and gender, 2034 compared to England. CLG 2012 Household projections (percentages)



Source: CLG © Crown Copyright

Figures A2 and A3 show the comparisons between Solihull HRRs and England HRRs. In general male HRRs in Solihull are low in the 20s and 30s but broadly the same as England otherwise. Solihull female HRRs are high in the 20s and 30s but low compared to England at higher ages.

What causes this and does it matter? A key intervening variable is the relationship structure of the population. That is, are individuals living in a couple (MC & FC), have they previously lived in a couple (ie divorced or widowed) (MPC & FPC) or are they single (MS & FS).

Figure A4: Solihull: Male Relationship Status by age, 2034 compared to England. CLG 2012 Household projections (percentages)

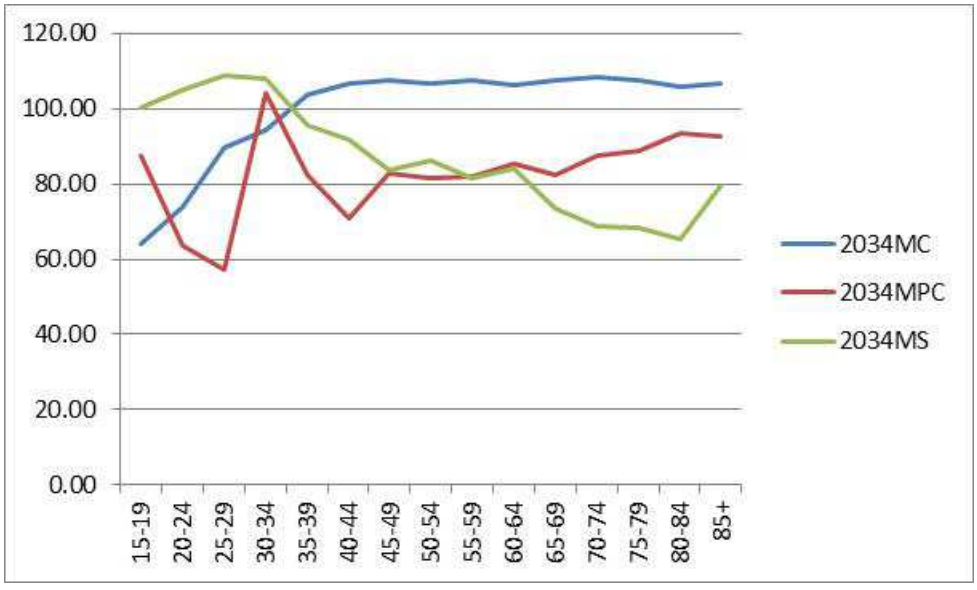
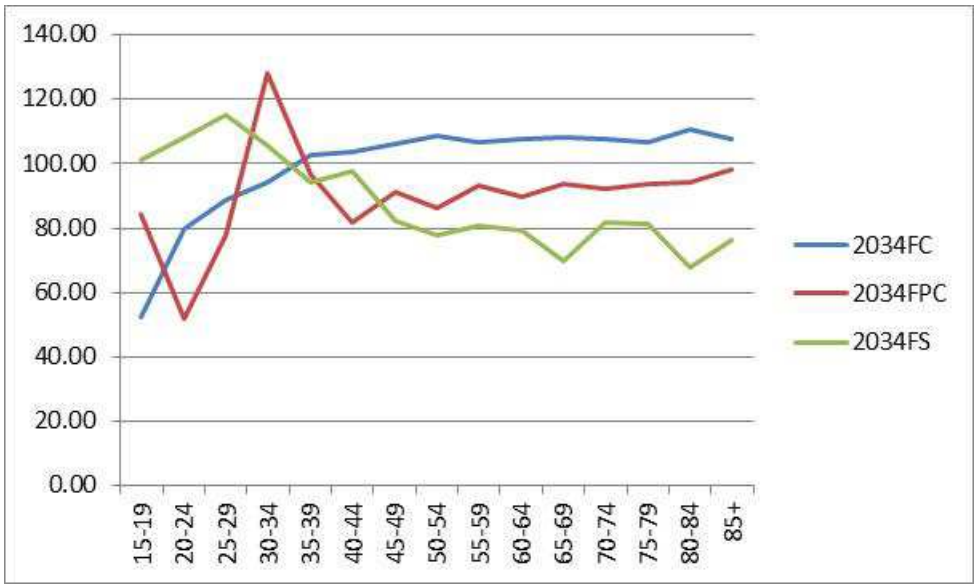


Figure A5: Solihull: Female Relationship Status by age, 2034 compared to England. CLG 2012 Household projections (percentages)



Figures A4 and A5 show that at ages below 35 Solihull residents are less likely to live in couples than residents of England as a whole but are more likely at higher ages. This is compensated by being more likely to be single at ages below 35.

Figure A6: Solihull: Male HRRs by age, 2034 compared to England. CLG 2012 Household projections (percentages)

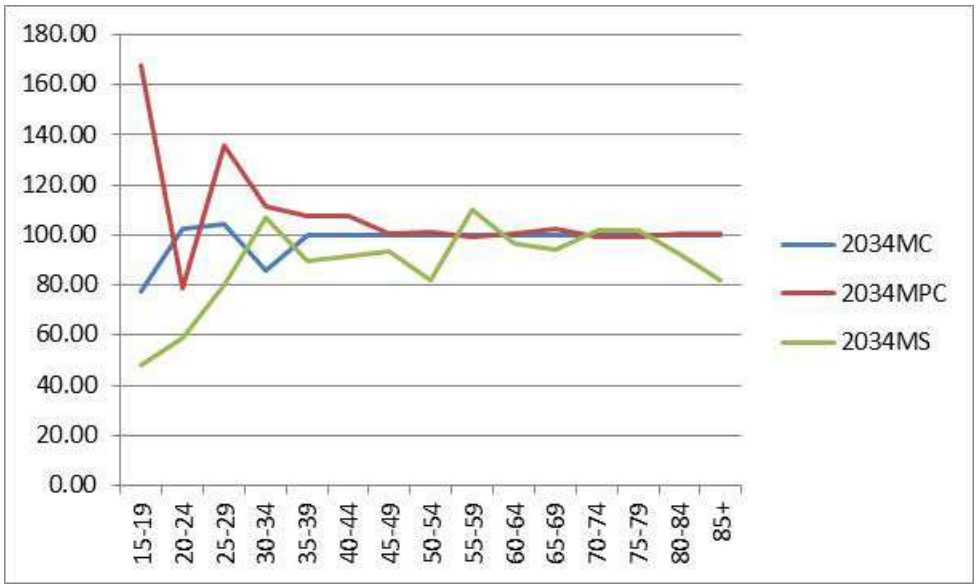


Figure A6 shows that males in Solihull are generally exhibiting higher or equal HRRs to England by age and relationship status. The numbers if cases in Solihull in several categories – notably at younger ages - cause the rates to be quite volatile. However, the broad picture is clear enough – the low comparisons seen in Figure A3 are more to do with relationship structure than generally low ability/willingness to form a household.

Figure A7: Solihull: Female HRRs by age, 2034 compared to England. CLG 2012 Household projections (percentages)

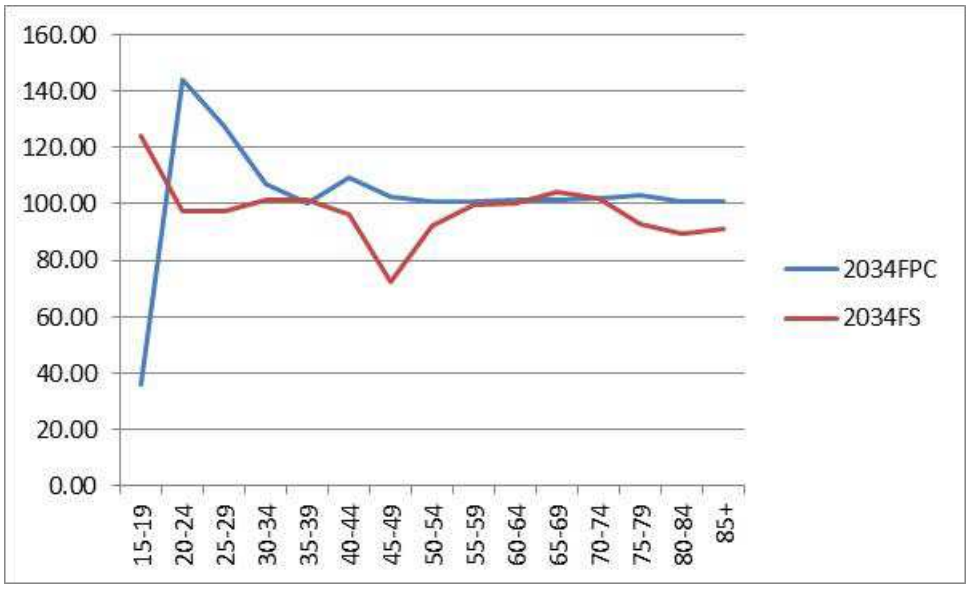


Figure A7 shows a similar picture for Solihull females. The main difference is that females living in couples cannot – by convention of the CLG modelling – represent a household. Therefore their HRRs are zero. HRRs for those who are single or formerly in a couple are generally equal to or higher than rates for England. The same caveats mentioned for males also apply to small numbers of cases in some categories.

In conclusion, the picture shown in Figure A2 of relatively low HRRs in Solihull for younger males and older females is a somewhat false one. The relative numbers of persons who live in couples or remain single is different in Solihull to the England average. When this is taken into account HRRs in Solihull are in most cases equal to or higher than the rates for England as a whole.

Appendix 2: Description of Demographic Models – updated January 2016

Inputs

Population

Base Population (gender and single years 0 to 90+): ONS 2014 mid-year estimate.

Other Populations: ONS MYE 2001-2013.

Births: latest mid-year to mid-year (2013-14) consistent with MYE change analysis.

Age-specific Fertility Rates and Total Fertility Rate Assumption: as ONS 2012 national and subnational projections.

Deaths: latest mid-year to mid-year (2013-14) consistent with MYE change analysis.

Survival/Mortality Assumptions: as ONS 2012 national and subnational projections.

Migration: Age/gender probabilities linked to annual average migration changes over a recent minimum five-year period between 2001 and 2014 (eg 2004-14 or 2009-14) using data from ONS MYE and ONS MYE change analyses.

Households

Household Representative Rates: Stage 1 rates from CLG 2012 projection for year 2011 to 2037. The model uses the CLG Stage 1 rates that are specific to 5-year age groups (15-19 … 85+), gender and relationship status.

Communal Population: as CLG 2012 assumptions.

Relationship Status (in a couple, formerly in a couple, single): as CLG 2012 assumptions.

Labour Force

Economic Activity Rates: 2011 Census by age groups and gender.

National Trends in EA Rates by age/gender: ONS national projection to 2020 (*Labour Market Trends* January 2006) with extension to 2037 using analysis by Kent County Council *Activity Rate Forecasts to 2036 (Provisional)* (published March 2014).

Processes

Population

1 Survive base populations (single years of age and gender) by one year.
2 Calculate and add net migration by single years of age and gender for the survivors. This gives the population of persons aged 1+ at the end of first projection year.
3 Calculate births by single years of age of mother (15 ... 49) using the average female population at each age group throughout the projection year.
4 Split total births by gender using most recent 5-year average.
5 Survive births by gender to the end of projection year.

6 Calculate and add net migration of those surviving infants by gender born in the projection year. This gives the population of 0 year old boys and girls at the end of the first projection year.
7 Repeat cycle until the final projection year.

Households

1 Separate total population (by gender and five-year age groups) into the three relationship statuses by following CLG assumptions of the proportions in each status.
2 Calculate communal establishment population by gender, age and relationship status by following CLG assumptions (constant numbers by gender, relationship status and age groups to 74 by and then constant proportions).
3 Calculate private household population by gender, age and relationship status by difference between total population and communal population.
4 Apply CLG Stage 1 household representative rates to the private household population by age, gender and relationship status. This gives total households.
5 Apply 2011 Census net vacancy rates, or other agreed rates, to convert households to homes.
6 The model may be run 'backwards' by defining a net annual increase in homes and iterating by adjusting the migration in the population projection to reach a fixed state where the population produces growth in households that is matched by the growth in homes allowing for a vacancy assumption.

Labour Force

1 Accumulate the 2011 Census data on economic activity by age to the required age groups (16-17, 18-19, 20-21, 22-24, 25-29, … 70-74, 75+) by gender and calculate the EA rates using the 2011 Census resident population as base.
2 Project the EA rates to 2036 according to the changes by age group and gender in the ONS and KCC projections. Extend from 2036 to 2037 and ensure rates do not exceed 100% or fall below 0%.
3 Accumulate the population projection to the required age groups by gender.
4 Apply the projected EA rates to the projected population.

Outputs

Total **Population** by single years of age (0-90+) and gender for all projection years to 2037.

Annual births, total fertility rates, deaths and net migration to 2036-37.

Total population, private household population and communal establishment population by age (0-4 … 85+), gender and relationship status every year 2011 to 2037.

Households by age (15-19 … 85+), gender and relationship status of household representative every year 2011 to 2037.

Households are converted to **homes** every year 2011 to 2037.

Economically active resident population by gender and age groups (16-17, 18-19, 20-21, 22-24, 25-29, … 70-74, 75+) for all years to 2037.

Solihull: Demographic Update

Version 1: 18 August 2016

John Hollis

1. Background

1.1 This Update will:

- Analyse the impact on Solihull of ONS and CLG 2014-based projections[1]
- Apply the representative rates and other assumptions of the CLG 2014 projections to updated Trends projections based on the ONS 2015 mid-year population estimate.

2. ONS 2014 SNPP

2.1 The latest ONS population projections – published in May 2016 – are based on UK migration trends over the five years previous to the base year and international migration over the previous six years. For England there is an annual long-term net migration gain of 163,200 – including a cross-border loss of 6,300 to the rest of the UK. This compares to an overall long-term net gain of 143,500 in the ONS 2012 SNPP including a cross-border loss of 6,500. In general the increased net international migration is spread amongst English local authorities according to the average distribution of the gross in and out flows over the previous six years. This in most cases leads to an increased net inflow. Table 1 compares the ONS 2012 and ONS 2014 projections of migration for Solihull.

Table 1: Solihull: Net Migration by Origin 2014-33. ONS 2012 SNPP and ONS 2014 SNPP

		2012 SNPP		2014 SNPP
2014-15	**England**	700		600
	Cross-border	0		0
	International	-100		200
	Total	**563**		**670**
2032-33	**England**	800		900
	Cross-border	0		0
	International	-100		0
	Total	**730**		**883**
2014-33	**Total**	**13,333**		**15,461**

[1] All ONS and CLG population and household estimates and projections are © Crown Copyright

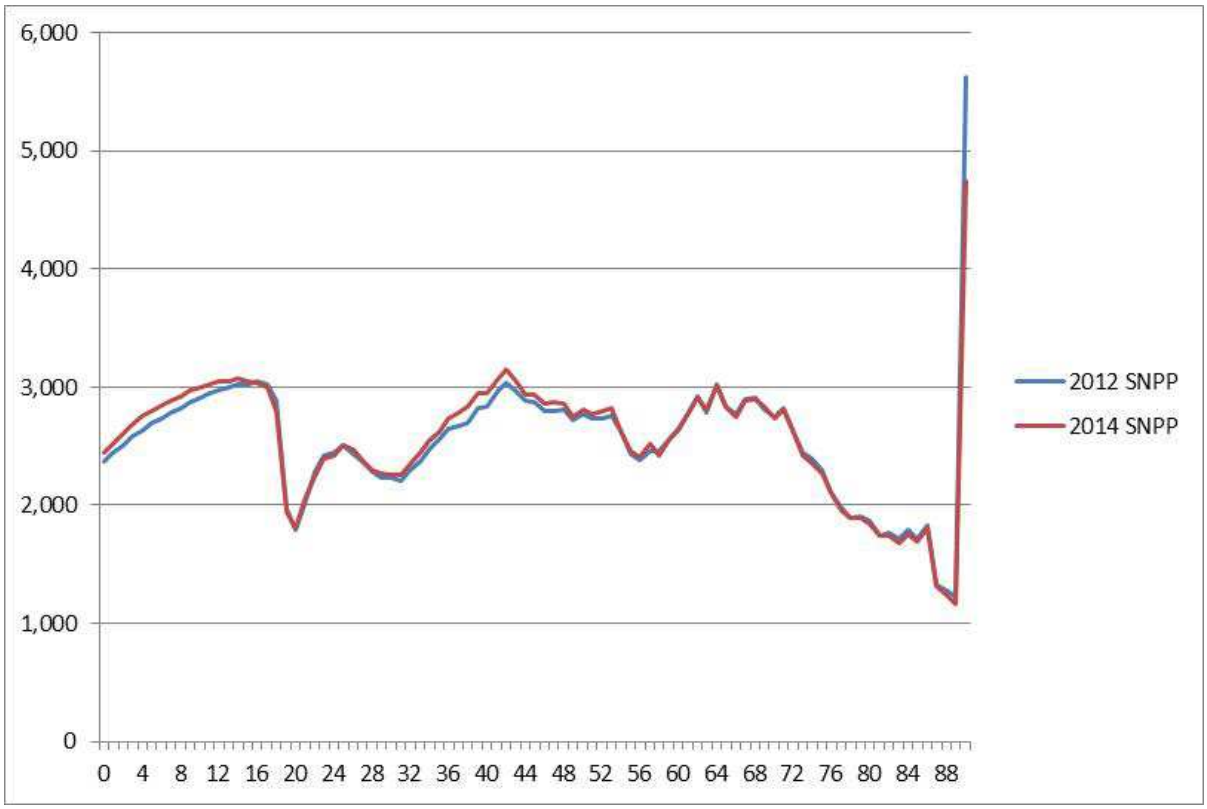
2.2 The ONS 2014 SNPP shows over 2 thousand more net migration into Solihull over the 19 years 2014 to 2033and the total population at 2033 is now projected to be nearly 2 thousand more than in the ONS 2012 SNPP. This is partly to do with the 2014 mid-year estimate being nearly 700 more than the 2012 projection for 2014. Table 2 shows the components.

Table 2: Solihull: Population Change by Component 2014-33. ONS 2012 SNPP and ONS 2014 SNPP

		2012 SNPP		2014 SNPP
2014	**Population**	**209,224**		**209,890**
2014-33	**Births**	43,939		44,973
	Deaths	35,548		37,569
	Natural Change	8,391		7,404
	Net Migration	13,333		15,461
	Total Change	21,724		22,865
2033	**Population**	**230,948**		**232,755**

2.3 Natural change 2014-33 is now projected to be reduced by about 1,000. This is due to projected increases of over 1,000 births balanced by increases over 2,000 deaths. Figure 1 shows the effect of the changed components on the age structure at 2033. The most significant changes are more school age children and persons in their 40s and the reduction in the projection of persons aged over 60 and particularly 90+. This reduction has a knock-on effect to the household projections as the elderly living in private households have the highest overall household representative rates. This group also has a high likelihood of requiring residential care. In general the 2014 SNPP is higher at all ages below 60 except at 16-24.

Figure 1: Solihull: Age Structure 2033. ONS 2012 SNPP and ONS 2014 SNPP



3. CLG 2014 Household Projections

3.1 The latest CLG projections were published on 12 July 2016. On this occasion both the Stage 1 and Stage 2 results were published simultaneously. Table 3 compares the Stage 1 results from the CLG 2012 and 2014 projections.

Table 3: Solihull: Stage 1 Household Projection by Age of Representative 2014-33. CLG 2012 and CLG 2014 Projections

		15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	Total
2014	**CLG 2012**	303	1,895	4,111	5,081	5,918	7,895	9,027	8,910	7,789	7,115	8,029	6,507	5,500	4,574	4,771	87,428
	CLG 2014	304	1,887	4,128	5,179	5,940	7,968	9,019	8,944	7,777	7,106	8,075	6,471	5,496	4,569	4,722	87,588
2033	**CLG 2012**	391	1,958	4,301	5,461	7,394	8,563	7,663	7,604	7,402	8,503	8,893	8,500	6,876	6,287	9,471	99,265
	CLG 2014	380	1,947	4,323	5,517	7,643	8,767	7,779	7,709	7,471	8,521	8,891	8,493	6,845	6,198	8,711	99,195
2014-33	**CLG 2012**	88	63	190	380	1,476	668	-1,364	-1,306	-387	1,388	864	1,993	1,376	1,713	4,700	11,837
	CLG 2014	76	60	195	338	1,703	799	-1,240	-1,235	-306	1,415	816	2,022	1,349	1,629	3,989	11,607
	Difference	-12	-3	5	-42	227	131	124	71	81	27	-48	29	-27	-84	-711	-230

3.2 The CLG 2014 projections imply growth in households 2014-33 that is over 200 fewer than the CLG 2012 projection. Increases occur mainly at ages 35-64 with significant reduction at 75+. These changes are mainly due to the changes in the age

structure of the ONS 2014 SNPP, although a minority would be due to amendments to the underlying household representative rates caused by the introduction of two years additional Labour Force Survey data for England that is distributed to the local authorities. At 5-year age bands the differences are no more than 0.5% with an average value of the absolute deviations of 0.25%.

3.3 At Stage 2 the CLG Stage 1 results are converted to eight household types but by a reduced number of age groups that are mainly 10-year groups rather than 5-year. The results for Solihull are shown in Table 4.

Table 4: Solihull: Stage 2 Household Projections 2014-33. CLG 2014 Projection

	2014	2033		2014-33	%
One person households: Male	11,360	15,020		3,660	32.2
One person households: Female	14,653	15,976		1,323	9.0
One family and no others: Couple: No dependent children	22,668	23,283		615	2.7
A couple and one or more other adults: No dependent children	7,818	8,328		510	6.5
Households with one dependent child	11,647	15,052		3,405	29.2
Households with two dependent children	10,678	12,104		1,426	13.4
Households with three dependent children	3,850	3,803		-47	-1.2
Other households	4,913	5,628		715	14.6
Total	**87,587**	**99,194**		**11,607**	**13.3**

3.4 Overall households are projected to increase by 13.3 per cent but the growth in four groups exceeds this level; males living alone (32.2 per cent), households with one dependent child (29.2 per cent), households with two dependent children (13.4 per cent) and 'Other' households (14.6 per cent). 'Other' households are 2 or more unrelated adults not living as a family.

3.5 Although the Stage 2 results are constrained overall to the results of Stage 1 a different set of basic data have been used to generate the household headship rates – rather than household representative rates. This can result in some significant differences with the age structure of the two sets of results. (Details can be provided if required.)

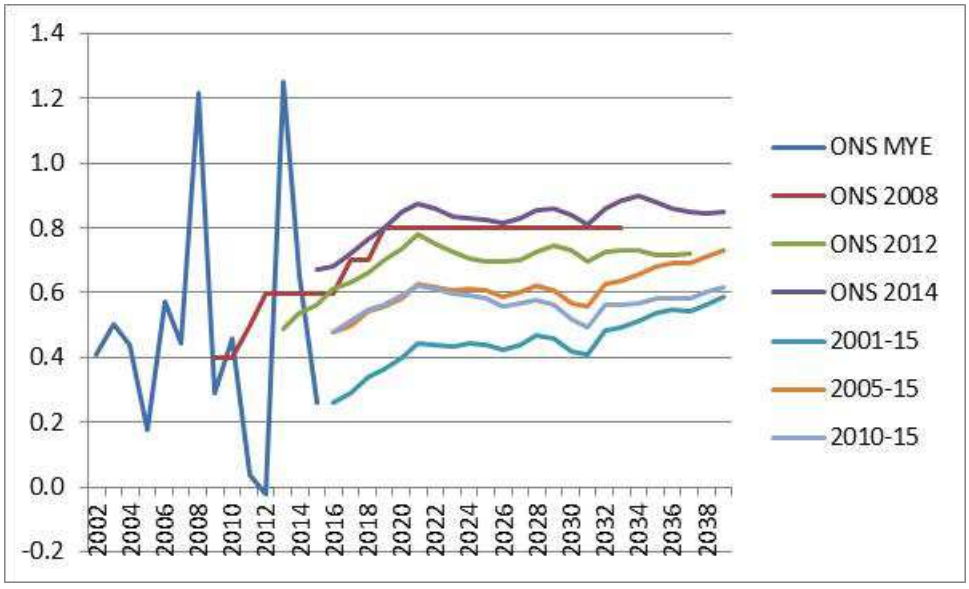
3.6 In summary the CLG 2014 household projections indicate average growth in households 2014-33 of 611. This compares with 623 in the CLG 2012 projections. In terms of average annual requirement – the OAN – the CLG 2014 projections imply a rate of 627 net new homes per year compared to 639 from the CLG 2012 projections. Both calculations assume that the 2011 Census net vacancy/second homes level of 2.55 per cent persists.

4. Updated Trends Projections

4.1 In light of the revised fertility and mortality rates used in the ONS 2014 SNPP and the small variations in household representative rates of the CLG 2014 projections the three previously prepared Trends projections has been updated. All three projections are based on the ONS mid-2015 estimates and the periods over which migration trends have been calculated are 2001-15, 2005-15 and 2010-15. Table 5 summarises the results of the three projections and compares them to the earlier ONS/CLG projections.

4.2 In terms of total population each of the new trends projections are lower at 2033 than the recent ONS projections with annual growth of between 771 and 912 per year 2014-33 compared to 1,203 for the ONS 2014 SNPP. Projected household growth is also lower at 356 to 442 per annum compared to 611 for the CLG 2014 projection. These figures convert to a requirement for average annual net new homes at 365 to 453 per annum compared to 627 for CLG 2014. The main differences in terms of population and households are due to the differing levels of migration assumed in the projections. These are shown in Figure 2.

Figure 2: Solihull: Net Migration, estimates and projections compared 2001-39 (thousands)

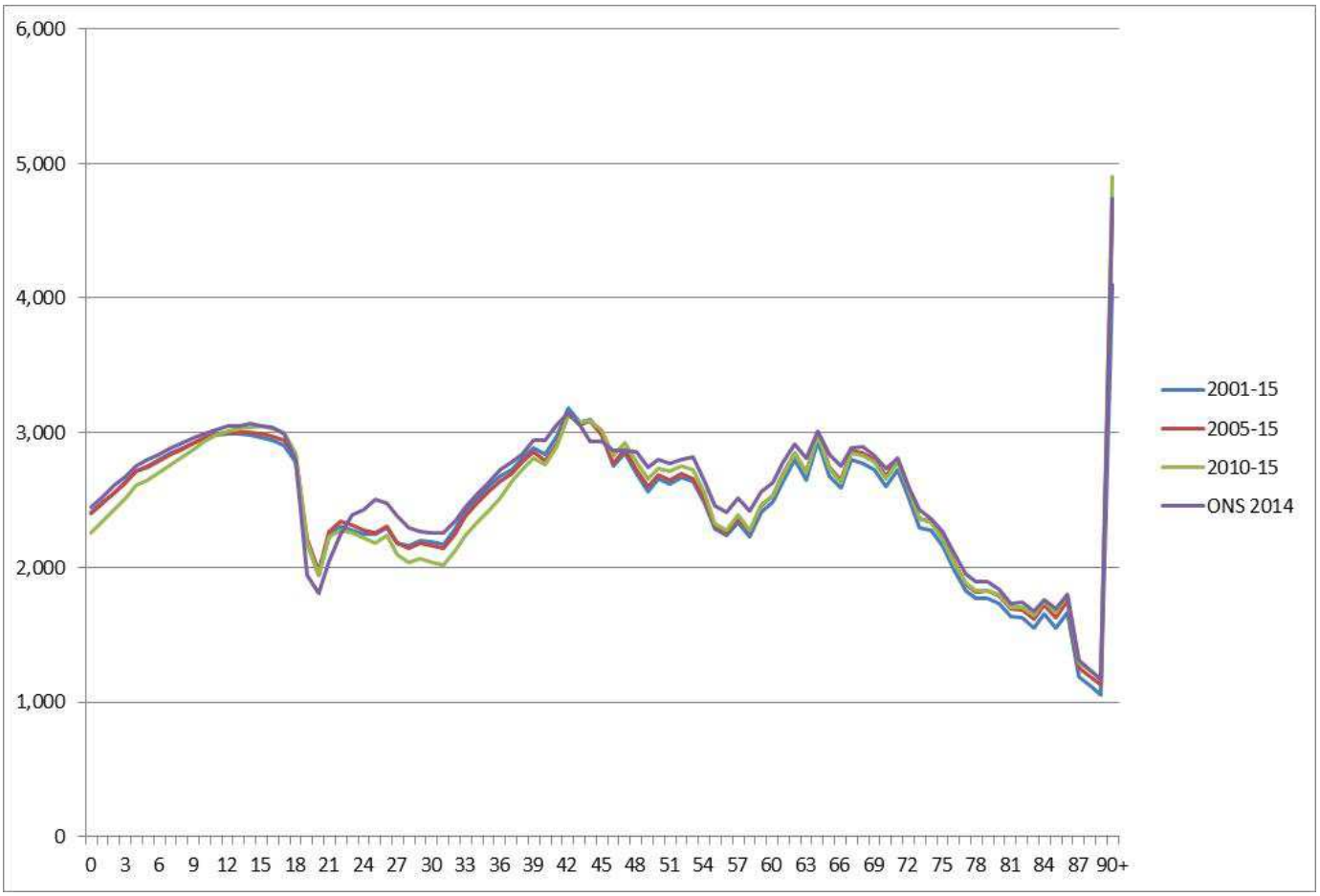


4.3 There have been two major peaks of net inflow to Solihull in 2007-08 and 2012-13. These are both years of exceptional net migration into Solihull from the rest of the UK. Each appears to have had undue influence on the trends projected by the ONS 2012 and 2014 SNPP in which future net migration is set at levels greater than all years since 2001-02 bar the two exceptional years. The three Trends projections all have lower net inflows more akin to the underlying levels of net inflow. The different net migration levels together with the different age profiles of the flows create different population structures at 2033. These are shown in Figure 3.

Table 5: Solihull: Projections to 2039 compared (thousands except pa figures)

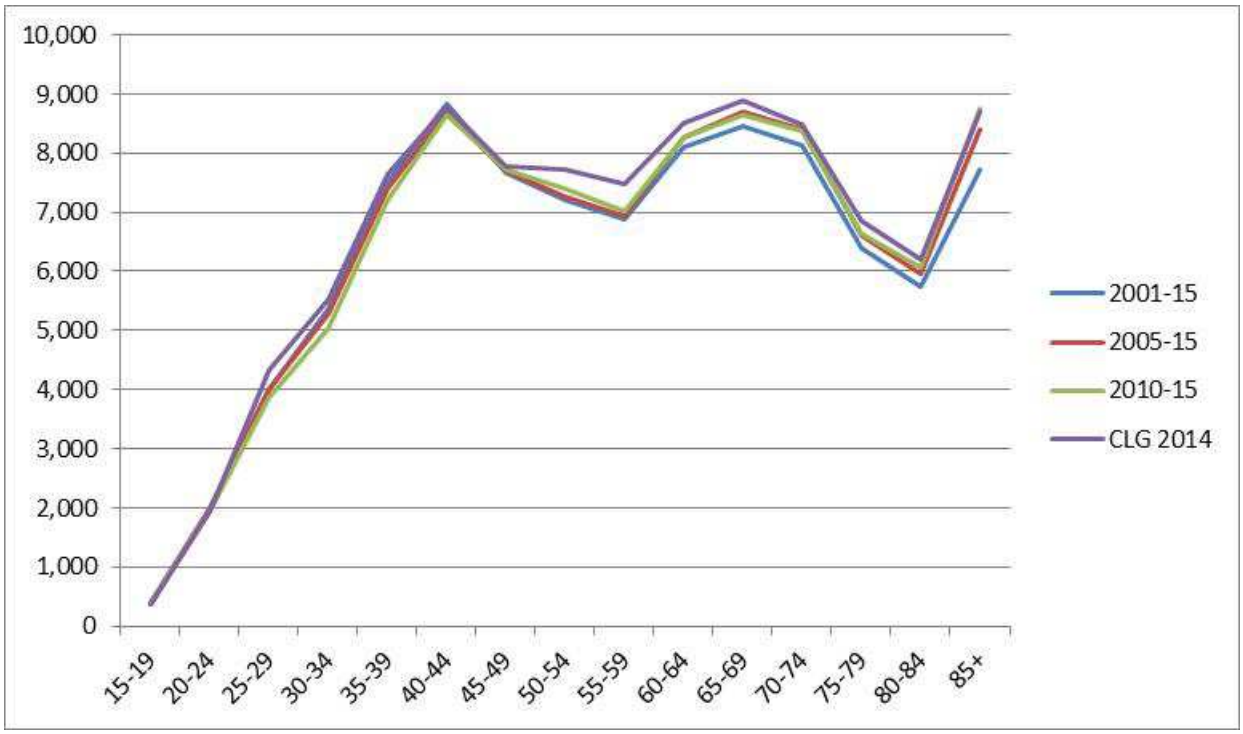
	ONS/CLG 2008	ONS/CLG 2012	ONS/CLG 2014	2001-15 Trends	2005-15 Trends	2010-15 Trends
Population (k)						
2001	199.6	199.6	199.6	199.6	199.6	199.6
2011	206.7	206.7	206.7	206.7	206.7	206.7
2014	209.7	209.2	209.9	209.9	209.9	209.9
2016	211.8	211.4	211.8	211.0	211.2	211.2
2021	218.1	217.5	217.9	214.7	215.8	215.7
2026	224.6	223.4	224.3	219.0	220.8	220.3
2031	230.7	228.9	230.4	223.0	225.4	224.2
2033		230.9	232.8	224.5	227.2	225.5
2039			239.4	229.2	232.6	229.4
2001-14	10,126	9,650	10,316	10,316	10,316	10,316
2014-33		**21,723**	**22,866**	**14,654**	**17,337**	**15,659**
pa		**1,143**	**1,203**	**771**	**912**	**824**
Households (k)						
2001	81.0	81.0	81.0	81.0	81.0	81.0
2011	85.5	86.2	86.2	86.2	86.2	86.2
2014	87.3	87.4	87.6	87.6	87.6	87.6
2016	88.6	88.6	88.7	88.3	88.4	88.4
2021	92.1	91.6	91.5	89.7	90.4	90.5
2026	95.7	94.8	94.7	91.5	92.6	92.7
2031	99.1	98.0	97.9	93.5	95.0	95.0
2033		99.3	99.2	94.4	96.0	95.9
2039			102.9	96.9	98.9	98.8
2001-14	6,331	6,425	6,585	6,585	6,585	6,585
2014-33		**11,837**	**11,614**	**6,765**	**8,398**	**8,348**
pa		**623**	**611**	**356**	**442**	**439**
Homes						
2014-33		**12,139**	**11,910**	**6,937**	**8,613**	**8,560**
pa		**639**	**627**	**365**	**453**	**451**

Figure 3: Solihull: Age Profiles at 2033, projections compared



4.4 There are subtle differences in the age structures that are difficult to determine from Figure 3.These are better seen on Figure 4 that presents households by age of representative. All four projections use the same assumptions about institutional population and relationship and share the same household presentative rates. It is clear that the CLG 2014 projection has more households than the Trends projections at all ages over 50. At younger ages the differences are small. At ages 70+ the 2005-15 and 2010-15 projections are relatively close to the 2014 SNPP – in fact the 2010-15 projection has slightly more representatives at age 85+ - but all three Trends projections have significantly fewer representatives between ages 50 and 69. This shows that the most important difference in age structure between the projections is the dominance of the ONS 2014 SNPP at higher ages.

Figure 4: Solihull: Age Profiles of Household Representatives at 2033, projections compared



4.5 The final comparison is between each of the projections and the one they have updated. Table 6 shows net housing need per annum. All of the updated projections show less need than their predecessors. This is, as expected, most pronounced in the projections using the shortest runs of migration trends (2009-14 and 2010-15) where the replacements of one year with another is 1:5.

Table 6: Solihull: Annual average net housing need 2014-33. Projections compared

ONS 2012 SNPP	**639**			
ONS 2014 SNPP	**627**			
2001-14		**397**		
2001-15		**365**		
2004-14			**473**	
2005-15			**453**	
2009-14				**520**
2010-15				**451**

5. Conclusions

5.1 While the ONS 2014 SNPP shows a higher population at 2033 than the ONS 2012 SNPP due to higher projected net immigration, which is tempered by reduced natural change that is largely a consequence of higher numbers of deaths, there is little difference in the projected increase in households in the CLG 2014 projection over the period 2014-33 compared to the CLG 2012 projection – a reduction of 230 over the 19 years.

5.2 Updated migration trends projections that use the ONS mid-2015 population estimate as their base all result is slightly reduced numbers of required average annual net new homes over the 2014-33 period than the projections they replaced. While the CLG 2014 projection implies 627 new homes the three new Trends projections show a requirement between 365 and 453 per year. The differences are mainly a consequence of the ONS projection appearing to have a migration level that is high compared to the recent past and showing notably higher populations than the Trends projections at higher ages.

Solihull: Note

Version 1: 30 September 2016

John Hollis

1. Background

1.1 This Note will briefly describe a projection for Solihull that shows the impact of providing an average of 751 dwellings (homes) per year (dpa) between mid-2014 and mid-2033. Results are compared to recent ONS and CLG projections[1] and the three recent migration trends projections.

1.2 This rationale for projecting on this basis is that:

i) The CLG 2014 household projections showed an increase in the period of 11,607 households,

ii) This is equivalent to 11,903 dwellings using a net vacancy rate of 2.49%,

iii) There is a 10% market signals uplift, and

iv) There is an additional requirement of 1.184 homes to fill the 2011-14 SHNS gap,

v) Leading to a requirement of 14,278 additional homes in the period 2014-33, an average of approximately 751 per year.

2. Method

2.1 Two initial population projections for Solihull are prepared based upon the ONS mid-2015 estimates. One uses average recent high migration trends and the other average recent low trends. The trends are the highest and lowest nine years between 2001 and 2015. The low trends population is converted to households by applying the representative rates and other assumptions of the CLG 2014 projections. Households are converted to homes using the 2011 Census ratio of occupied to total household spaces (0.9751). Projected additional homes between 2014 and 2033 are calculated and compared to 14,278. The difference is spread evenly between 2015 and 2033. This is an average provision of 769 homes per year. Between 2014 and 2015 the CLG household projection methodology applied to the 2015 ONS population estimate implies growth of 419 households, equivalent to 430 homes leaving the requirement for 13,848 homes between 2015 and 2037 – 769 per year.

2.2 A new population is prepared that is a weighted average between the low and high projections. This is also converted to households and homes and compared to the planned development schedule of 769 homes (2015-33). A new set of weights are prepared. This process iterates until the conversion to households and homes matches the development schedule. A summary of the results is shown in Table 1.

[1] All ONS and CLG population and household estimates and projections are © Crown Copyright

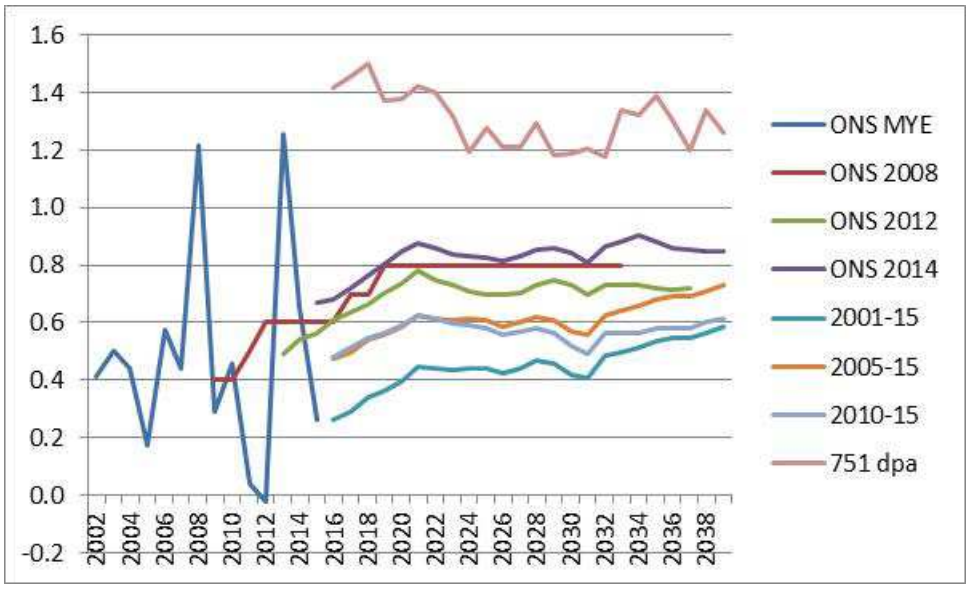
Table 1: Solihull: Projections to 2039 compared (thousands except pa figures)

	ONS/CLG 2008	ONS/CLG 2012	ONS/CLG 2014	2001-15 Trends	2005-15 Trends	2010-15 Trends	751 dpa
Population (k)							
2001	199.6	199.6	199.6	199.6	199.6	199.6	199.6
2011	206.7	206.7	206.7	206.7	206.7	206.7	206.7
2014	209.7	209.2	209.9	209.9	209.9	209.9	209.9
2016	211.8	211.4	211.8	211.0	211.2	211.2	212.2
2021	218.1	217.5	217.9	214.7	215.8	215.7	221.3
2026	224.6	223.4	224.3	219.0	220.8	220.3	230.1
2031	230.7	228.9	230.4	223.0	225.4	224.2	238.5
2033		230.9	232.8	224.5	227.2	225.5	241.7
2039			239.4	229.2	232.6	229.4	251.4
2001-14	10,126	9,650	10,316	10,316	10,316	10,316	10,316
2014-33		**21,723**	**22,866**	**14,654**	**17,337**	**15,659**	**31,823**
pa		**1,143**	**1,203**	**771**	**912**	**824**	**1,675**
Households (k)							
2001	81.0	81.0	81.0	81.0	81.0	81.0	81.0
2011	85.5	86.2	86.2	86.2	86.2	86.2	86.2
2014	87.3	87.4	87.6	87.6	87.6	87.6	87.6
2016	88.6	88.6	88.7	88.3	88.4	88.4	88.8
2021	92.1	91.6	91.5	89.7	90.4	90.5	92.5
2026	95.7	94.8	94.7	91.5	92.6	92.7	96.3
2031	99.1	98.0	97.9	93.5	95.0	95.0	100.0
2033		99.3	99.2	94.4	96.0	95.9	101.5
2039			102.9	96.9	98.9	98.8	106.0
2001-14	6,331	6,425	6,584	6,585	6,585	6,585	6,585
2014-33		**11,837**	**11,607**	**6,765**	**8,398**	**8,348**	**13,914**
pa		**623**	**611**	**356**	**442**	**439**	**732**
Homes							
2014-33		**12,139**	**11,903**	**6,937**	**8,613**	**8,560**	**14,269**
pa		**639**	**626**	**365**	**453**	**451**	**751**

3 Results

3.1 Figure 1 shows recent estimated and projected migration levels for Solihull.

Figure 1: Solihull: Net Migration, estimates and projections compared 2001-39 (thousands)

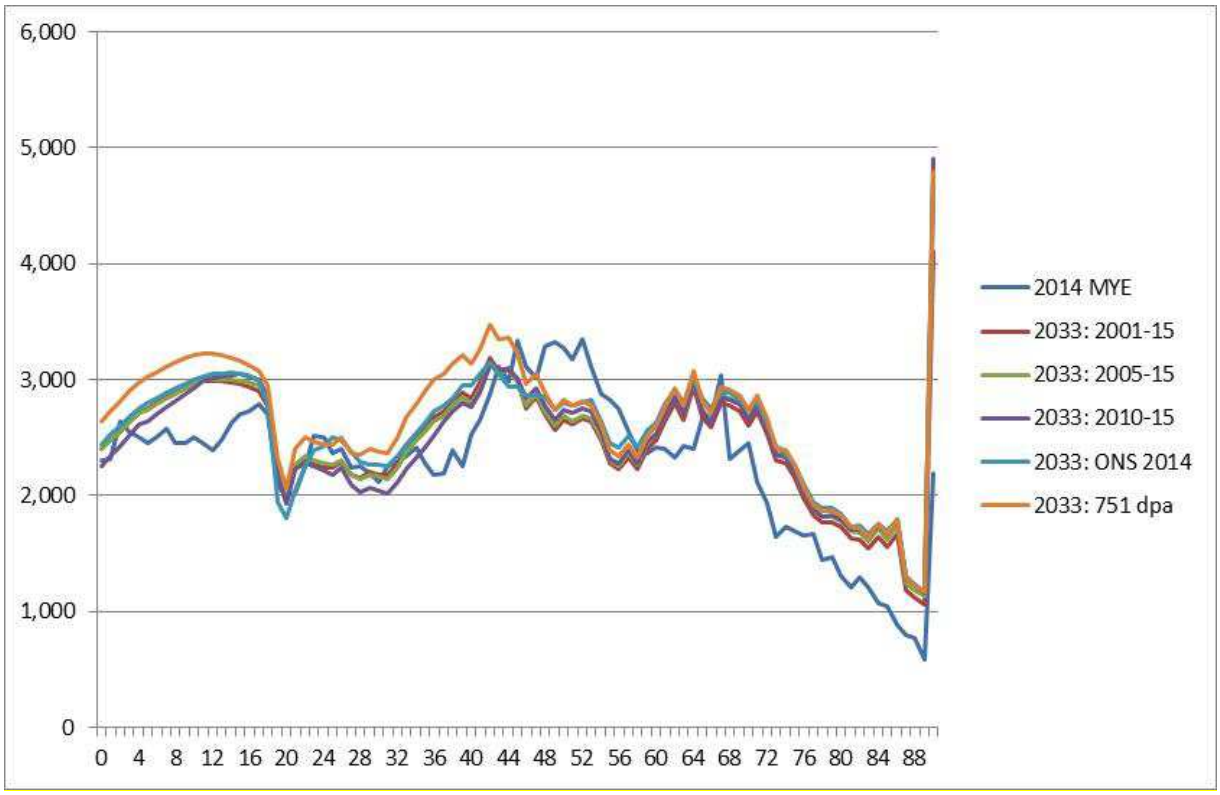


3.2 The 751 dpa projection shows a slightly falling trend of net migration into Solihull of between 1,500 and 1,200 per year. This level is similar to the two recent highest estimated net inflows in 2007-08 and 2012-13, that were the result of high net inflows from the rest of the UK. It is significantly higher than the levels assumed by the ONS SNPP 2014 and recent trends projections.

3.3 Figure 2 shows the age structure of the 751 dpa projection at 2033 and compares this with other recent ONS and migration trends projections as well as the 2014 mid-year estimate. Compared to the ONS SNPP 2014 the 751 dpa projection shows more persons in theirm30s and 40s. This younger profile also has more children. All projections are consistent in showing the most significant change since 2014 as being the growth in the population aged over 60, and particularly aged over 90.

3.4 The 751 dpa projection has a population outcome in 2033 that is about 9,000 higher than the ONS SNPP 2014; and the number of households is higher by 2,300. The 751 dpa projection, being based on migration levels over a longer period, has an age structure that contains more persons in the main working ages and their children, hence raising the effective average household size above that projected by the ONS 2014 SNPP that was more dominated by the elderly, who exhibit the highest household representative rates.

Figure 2: Solihull: Age Profile: 2014 and 2033, projections compared



Solihull: CLG 2014 Stage 1 and Stage 2 Households Compared

Version 1: 2 October 2016

John Hollis

1. Background

1.1 This Note compares the Stage 1 and Stage 2 outputs for Solihull in 2033 from the CLG 2014 household projections.

1.2 The CLG household projections are initially carried out by converting the ONS 2014 SNPP to Stage 1 households as follows:

(i) Sum the single year of age populations into 5-year age groups to 85+

(ii) Split into three categories for each gender; living in a couple, formerly living in a couple and single.

(iii) Split each category into residents living in households and those living in institutions

(iv) Apply household representative rates to five of the six categories of residents living in households; the exception is females living in a couple

(v) Carry out necessary constraining so that local authority results are consistent with results for England.

1.3 The annual Stage 1 household totals are the constraints for the Stage 2 household projections that are calculated for eight household types with a reduced number of age groups, mostly of ten years. In Stage 2 only one-person households are defined by male and female heads, the others are specific to persons. Hence all comparisons below are by persons. While the Stage 1 modelling uses Census data from all censuses between 1971 and 2011, with more recent national data from the Labour Force Survey, the Stage 2 modelling is carried out based on a different set of data from the 2001 and 2011 Censuses. The two sets of data are consistent by age of representative at 2011 but move apart during the course of the projection.

2. Data

2.1 Table 1 shows the Stage 1 results for households and household population accumulated to the age groups used in Stage 2. It also shows the equivalent Stage 2 results as well as hen Stage 1 household representative rates (HRRs) and the Stage 2 household headship rates (HHRs). Stage 1 results are those upon which the calculations of OAN should be made.

2.2 The bottom panel of the Table compares the total households by age group. It shows the drifty away from the household structure of Stage 1 over the projection period. Stage 1 has significantly more households at ages 25-34 and 65-74 whereas Stage 2 has more at ages 35-44 and 45-54. Differences at other age groups are smaller.

Table 1: Solihull: CLG Stage 1 and Stage 2 Projections by age at 2033

		15-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85+	Total
Stage 1	**Households**	2,327	9,840	16,410	15,488	7,471	8,521	17,384	13,043	8,711	**99,195**
	Household Population	24,630	23,681	28,955	28,002	12,313	14,118	27,037	18,435	10,757	**187,928**
	HRR	0.0945	0.4155	0.5667	0.5531	0.6068	0.6036	0.6430	0.7075	0.8098	
		15-24	**25-34**	**35-44**	**45-54**	**55-59**	**60-64**	**65-74**	**75-84**	**85+**	**Total**
Stage 2	**Households**	2,549	8,164	17,516	18,134	7,582	7,980	15,968	12,614	8,688	**99,195**
	Household Population	24,631	23,681	28,955	28,001	12,314	14,118	27,039	18,435	10,757	**187,931**
	HHR	0.1035	0.3447	0.6049	0.6476	0.6157	0.5652	0.5906	0.6842	0.8077	
		15-24	**25-34**	**35-44**	**45-54**	**55-59**	**60-64**	**65-74**	**75-84**	**85+**	**Total**
	Stage 1 Households	2,327	9,840	16,410	15,488	7,471	8,521	17,384	13,043	8,711	**99,195**
	Stage 2 Households	2,549	8,164	17,516	18,134	7,582	7,980	15,968	12,614	8,688	**99,195**
	Stage 1 - Stage 2	-222	1,676	-1,106	-2,646	-111	541	1,416	429	23	0

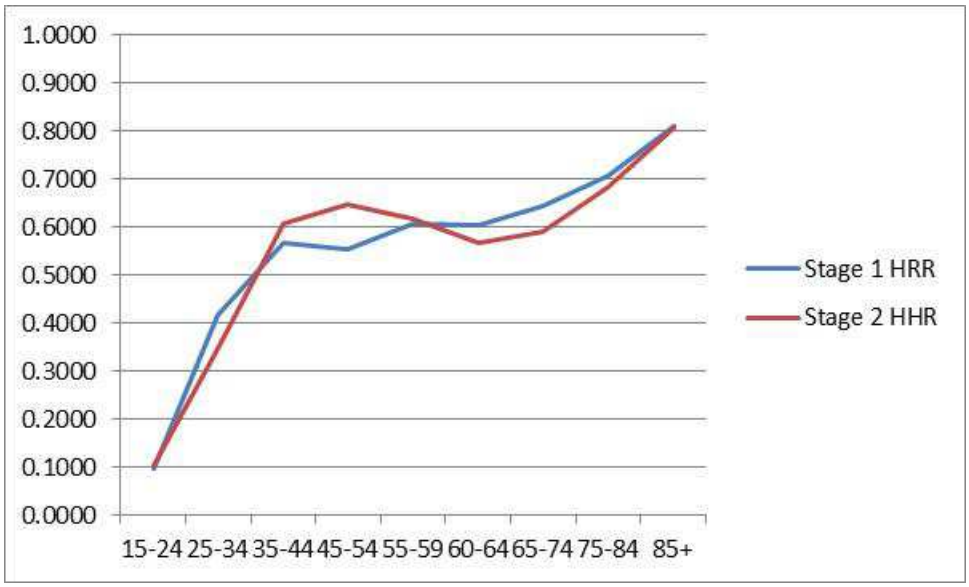
2.3 The age group 25-34 has seen significant reductions in the household representative rates since 2001 and is often the focus of argument as to whether future rates at this age should be increased - often to levels seen in the CLG 2008 projection. Stage 1 – using 40 years of data in its base - shows more households than Stage 2 - based on changes between the 2001 and 2011 Censuses. The unknown in these calculations is the extent to which initial results had to be constrained to match the Stage 2 totals.

Table 2: Solihull: CLG Stage 1 and Stage 2 HRR and HHR by age at 2033

	15-24	25-34	35-44	45-54	55-59	60-64	65-74	75-84	85+
Stage 1 HRR	0.0945	0.4155	0.5667	0.5531	0.6068	0.6036	0.6430	0.7075	0.8098
Stage 2 HHR	0.1035	0.3447	0.6049	0.6476	0.6157	0.5652	0.5906	0.6842	0.8077
Stage 1 less Stage 2	-0.0090	0.0708	-0.0382	-0.0945	-0.0090	0.0383	0.0524	0.0233	0.0021
Stage 2 as % of Stage 1	**109.5**	**83.0**	**106.7**	**117.1**	**101.5**	**93.7**	**91.8**	**96.7**	**99.7**

2.4 Table 2 shows the effective household representative and headship rates by age . It shows discrepancies, as high as 17%, at most ages. Only 55-59, 75-84 and 85+ are within 5%. Figure 1 shows the HRR and HHR by age.

Figure 1: Solihull: CLG Stage 1 and Stage 2 HRR and HHR by age at 2033



2.5 While the Stage 1 HRRs are increasing through the age bands, with some minor discrepancies, the Stage 2 HHRs decline from a peak at 45-54 to a trough at 60-64 before continuing to the highest rates of all at 85+.

3. Conclusions

3.1 Although the Stage 2 results are constrained to the Stage 1 totals they are not constrained by any of the features of the Stage 1 output – gender, age or relationship of household representative. It is therefore inevitable that discrepancies will occur. They are only determinable by age as no gender data are available at Stage 2 (only one–person households are shown by gender of head). The major differences are that Stage 2 shows too few households headed by persons aged 25-34 and 65-74 and too many at ages 35-44 and 45-54.

3.2 The discrepancies are significant -17% at 25-34 and 45-54 – so it is not recommended to replace the Stage 1 results with Stage 2 in calculations of OAN.

APPENDIX B EXPERIAN DATA

Experian Local Economic Model Scenario – Peter Brett/ Solihull (July 2016)

Overview of Experian's local forecast methodology

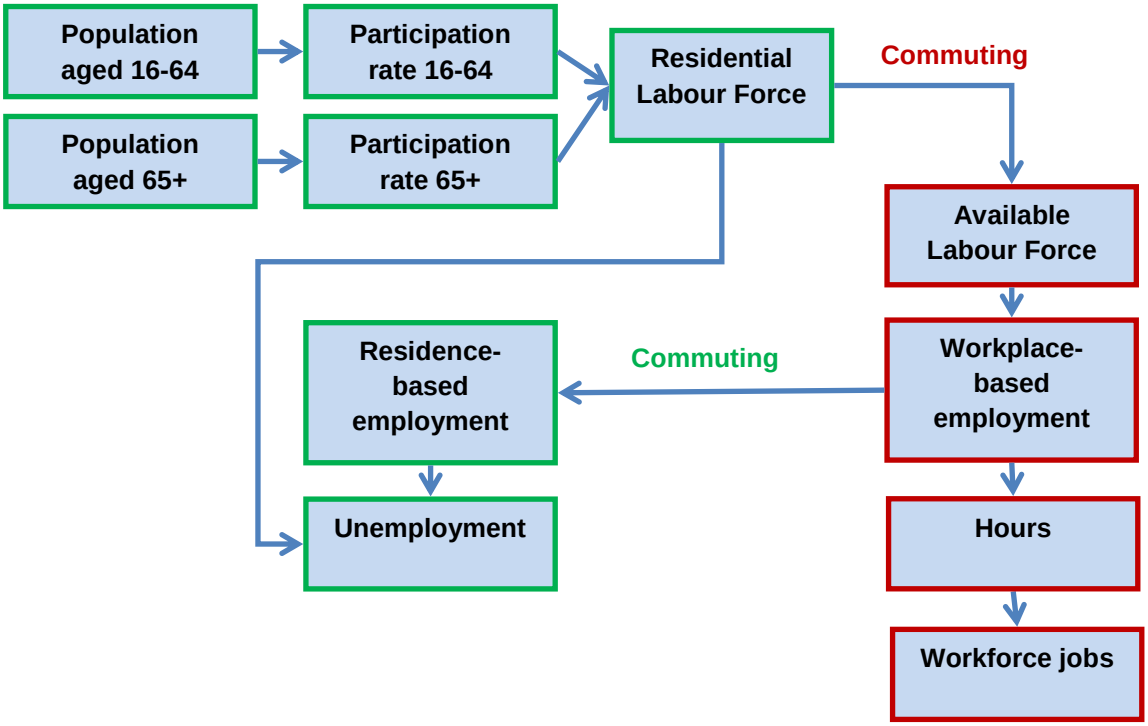
Experian adopts a 'top-down' approach to produce forecasts at the regional and local authority level. At all stages, the national macroeconomic forecast is the main control, followed by the regional forecast. The starting point for our forecasts is a very wide range of historical economic data that is collected at a highly disaggregated level and covers all the major economic indicators published by the Office for National Statistics.

Experian's local model is based on the resolution of demand and supply for labour and takes into account commuting between local areas within a region and across the regional boundary. The starting point is an estimate of the growth in the participation rate of those aged 16-64 and 65-plus in a local area. These are used to derive labour force growth.

In parallel, demand for labour is estimated. This is achieved at the industry level by linking job growth in a local area to growth in the same industry at the regional level and then constraining demand for jobs by industry to demand for jobs for the same industry at the regional level.

In the final stage, the commuting flow acts to balance between the demand and supply of labour within a region. The inflow and outflow of workers across the regional boundary is shared out between local areas according to their historic commuting patterns.

The flow chart below illustrates the relationship between workplace-based variables (red outlined boxes) or residence-based variables (green-outlined boxes). Workplace-based and residence-based variables are linked by commuting relationships derived from the 2011 Census.



For scenario 2 (see below), an additional step in the process is used to calculate the inward migration necessary to fill in all of the excess jobs. This inward migration was calculated under the following assumptions:

- The unemployment rate in each local authority would be unchanged.
- The activity rate (16+) in each local authority would be unchanged.
- The ratio of workers to jobs in each local authority would be unchanged.
- The additional workers necessary to fill the excess jobs in a given local authority would be allocated between the local authorities so that the commuting ratio is unchanged.
- All of the incoming workers would be aged 16-64.
- The incoming workers would bring dependent children (aged <16) and dependent seniors (aged 65+) with them according to ratios provided by John Hollis.

Since any inward migration increases the population, this would increase the demand for health and education service jobs generated by local residents. Consequentially, further rounds of inward migration would be necessary to fill these jobs. Since the additional inward migration generated by an increase in population is less than the increase in population, the total inward migration can be calculated iteratively as eventually the number of excess jobs will converge to 0.

Overview of assumptions for the scenarios

Experian generated two alternative economic scenarios in addition to the baseline forecasts from the Regional Planning Service (RPS) as summarised in the table below.

Variable	Scenario 1 Assumption	Scenario 2 Assumption
Population	09-14 trend population scenario	09-14 trend population scenario
Economic activity rates	Experian baseline RPS December 2015	Experian baseline RPS December 2015
Commuting patterns	Experian baseline RPS December 2015	Experian baseline RPS December 2015
Job demand	Experian baseline RPS December 2015	Solihull UK Central jobs scenario

Synopsis of the scenario results

Scenario 1:

There are 2,800 fewer residents in Solihull in the scenario compared to the baseline by 2035. Compared to the Experian baseline scenario, there are fewer residents aged 16-64 and 65 plus. Demand for jobs is slightly lower compared to the baseline because endogenous demand for jobs is weaker due to the smaller population. Endogenous demand is generated by the resident population in the local authority that demand services in the area. Economic activity rates are lower for both age groups since the availability of fewer jobs in the labour market discourages people to join the labour market as there is more competition to find employment.

The combination of the lower participation rates and lower population growth causes the labour force to increase at a lower rate than in the baseline forecasts. The weakening in demand for jobs is small compared to the slower growth in the supply of workers. Of the 2,200 decrease in the labour force compared to the baseline by 2035, residence-based employment falls by 2,000 people. The rest of the fall consists of people who would have been unemployed in the baseline.
In conclusion, the population has been reduced by enough across each age band in this scenario to introduce a constraint to the labour market. This is because the decrease in job demand compared to the baseline is much smaller than the decrease in labour supply.

Scenario 2:

In this scenario, job demand has been increased in line with the Amion forecasts for the Retail & Leisure, Light Industrials and Office sectors in Solihull. We have also incorporated the corresponding reductions in job demand for the rest of the GBSLEP area and the 09-14 trend population projection.

The tighter labour market has encouraged more people to participate as their prospects of finding work have improved. This is particularly noticeable among those aged 16+, meaning that overall participation rates rise to 61.9% by the end of the forecast period. The new potential jobs are filled not only by inactive residents, but also those who were unemployed in the baseline case and commuters from the rest of the West Midlands. The overall increase in jobs for the West Midlands is 5,500 by 2035.