West of England Sub-region

Housing Need and Affordability Assessment

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WEST OF ENGLAND HOUSING NEED AND AFFORDABILITY MODEL

FINAL REPORT

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Contents

Executive Summary

1. This report provides results of a new study of housing affordability and housing need for the West of England subregion. The study uses a locally-adapted version of a model which makes intensive use of secondary data sources and which has been used in a number of recent national reports.

2. In 2004 only just over a third of new households (34.2%) could afford to buy in the subregion, even after allowing for wealth. Affordability deteriorated sharply between 2002 and 2004, but is projected to improve in the coming period.

3. About 15% of new households could afford shared ownership or other 'intermediate' forms of housing. Under current conditions private renting is more affordable than house purchase.

4. Net need for additional affordable housing rises from 3537 in 2002 to 4422 in 2004, then falling back to 3038 by 2009, with an average over the period of 3713. There is a positive net need in all but one of the 19 zones within the subregion. However, the ratio of need to population, or to available relets, is generally greater in North Somerset and South Gloucestershire, and to a lesser extent in Bath & NES, than in most parts of Bristol City, except the Inner North West and Outer East zones.

5. The largest element of need is new households unable to afford to buy, although the backlog of existing need is quite significant, particularly in Bristol.

6. About 25% of net need could be met by intermediate forms of provision (such as shared ownership).

7. Net affordable need significantly exceeds total projected new dwellings in BANES, while being similar in magnitude in the other three authorities. In only a few zones is the level of projected new development sufficient to accommodate affordable need numbers while maintaining a reasonable balance between affordable and market provision.

8. Recent rates of development have exceeded the projected level in Bristol and North Somerset while falling somewhat short in the other two districts. The local authorities are expecting to increase their affordable housing output substantially, but this will continue to fall far short of needs.

9. The report reflects the picture for the sub-region as a whole, and also provides more detailed information on size mix for affordable housing need for Bath and NES, Bristol and North Somerset. Some local authorities in the subregion have previously commissioned Housing Needs Surveys, although in most cases these have become quite dated because of changes in the housing market. The detailed methodology used in these surveys varies somewhat from one to another and is not the same as that used in this study. In general this report does not discuss evidence from these surveys. In the case of the most recent survey, that carried out in South Gloucestershire, in 2003 by John Herington Associates (final report March 2004) some comparisons have been made and the report cross-refers to this study as appropriate (particularly in relation to size and mix). Local Plan policy in South Gloucestershire has been based on the results of this survey and they have been used

to triangulate the subregional model. The results of the JHA survey can be viewed on the South Gloucestershire website at
http://www.southglos.gov.uk/BuildingControl/planning_pubs/lplancd.htm#Topic

10. The general picture is that 37% of the net need is for one-bedroom accommodation, 36% for two-bedroom and 28% for three-plus bedroom categories. However, one-bedroom needs are greatest in Bristol and least in South Gloucestershire. Two-bedroom needs are greatest in South Gloucestershire. Three-plus needs are greatest in North Somerset, with South Gloucestershire similar.

11. The model shows that 10% lower house prices would increase affordability by 5.6% points and reduce net need by 593 units per year (15%). Higher house prices would have roughly equal but opposite effects – if house prices remain constant in real terms, this would be the outcome in 2006. A very favourable interest rate and affordability scenario might reduce needs by around 22%.

12. Higher dwelling and household growth would increase needs by a modest amount, but would greatly increase the base numbers for affordable housing targets.

13. Shared ownership numbers are sensitive to financing arrangements and the minimum tranche offered, but there are additional opportunities for intermediate provision involving Homebuy, which may be increasingly financed by lenders, and targeting existing social tenants.

14. Net need numbers are sensitive to the allowance made for reducing the backlog, which accounts for 39% of the net need projected for 2006. This is particularly important in Bristol, which is the one authority which has a good prospect of being able to reduce its backlog.

15. If optimistic assumptions were made about the availability of Homebuy and/or moves to cheaper areas and/or private renting opportunities, these might reduce the net need figures by around a quarter (1045 units), but this would still leave a large net need total of around 2810. Reducing access to affordable housing for migrants and owner occupiers by half might reduce the need numbers by around 700.

1. Introduction and Overview

1.1 The author was approached in the summer of 2004 to see whether it would be possible to update a Housing Need and Affordability Model originally developed for Bristol City Council in the 1990s (and last used in 2002). Subsequent discussion led to the commission to develop a model covering the West of England Subregion, supported by the four unitary local authorities in the region. The model was to be similar in principle to the earlier affordability-based needs model, but technically more sophisticated and based substantially on recent national research carried out by the author in a number of Government-supported projects. It was also able to incorporate much more contemporary data including information from the 2001 Census and market data up to 2004.

1.2 After a period of time involved in identifying and obtaining from the authorities all of the requisite local data, the project has reached the stage of having a working model and comprehensive results to report.

1.3 This exercise is a form of 'local housing needs study', such as many local authorities undertake at regular intervals to support (a) Local Plan (Local Development Framework) policies for affordable housing, and (b) local housing strategies and investment programmes. It follows good practice guidance contained in the last official published document (DETR 2000), while taking some account of emerging issues likely to feature in future published guidance[1]. Many local housing needs studies involve the commissioning of special household surveys. This study, however, is essentially a piece of desk research. It is based on intensive use of secondary data sources, including both those available on a standard basis nationwide (e.g. Census, Land Registry house price data) and data compiled locally by the local authorities and their partners. It is also distinguished from many previous local needs studies, but in line with emerging good practice thinking, in adopting a sub-regional perspective.

1.4 The model used is adapted from those used by the author over the last 18 months to provide estimates of affordability, need and intermediate market potential for: (a) the Housing Corporation's Home Ownership Task Force (Housing Corporation 2003); (b) the Barker (2004) inquiry into Housing Supply; (c) the Neighbourhood Renewal Unit's Index of Access to Owner Occupation (for IMD2004); (d) the Scottish Executive, in support of its Affordable Housing Review, and (e) the Council of Mortgage Lenders recent study of lender-financed equity loans. (see Bramley 2004a, b)[2]. Annex B provides more technical detail on the model.

[1] Glen Bramley was lead author of the 2000 Guidance and advised ODPM on the commissioning of the project to update this guidance, which is expected to be published this year. Annex A comments on the correspondence between the model used in this study and the 2000 Guidance.

[2] See references; in addition, an article by Bramley and Karley has been accepted for publication in the refereed journal *Housing Studies* during 2005, which provides more analytical background to the model and evidence to justify some of its key assumptions.

Box 1.1: The main features of the approach

are as follows

- The ability of younger newly forming households to afford to access owner occupation is assessed by reference to modelled income distributions, threshold house prices, with adjustments for the availability of family wealth
- This is combined with demographic and supply information to obtain an estimate of the net need for additional affordable housing
- The assessment is repeated for 2002, 2004 and two forward projection years , 2006 and 2009
- The assessment is undertaken for a disaggregated set of 19 geographical zones covering the four local authorities
- Disaggregation is also provided in respect of various forms of 'intermediate' affordable housing (e.g. low cost home ownership) and in terms of dwelling size
- The robustness or sensitivity of the assessment to a range of assumptions is tested and reported
- The model results and structure are intended to be usable in future by the local authorities, for example in exploring the implications of changed market conditions or different planning scenarios.

2. Key Results: Affordability

Box 2.1: Affordability Assumptions

The key assumptions about affordability made in this study are as follows.

- Threshold house prices are based on lower quartile house prices from the Land Registry, adjusted for size
- Required income is based on lending multiplier of 3.5 (for single earner, 0.85x3.5 for two earners), subject to test that residual income after housing costs exceeds 120% of Housing Benefit Applicable Amount
- Rental and shared ownership affordability ratios are that outgoings should not be more than 30% of net income, subject to the same residual income test
- Incomes of newly forming households are represented by the modelled incomes of all under-35 households
- Adjustment for extra households able to afford due to availability of family wealth, based on various evidence from national surveys and local proxy indicators
- House prices peak in 2004 and are subject to a real terms 'correction' (i.e. reduction) of 15% thereafter.

2.1 Box 2.1 above lists the key assumptions about affordability made in the baseline estimates and projections.

2.2 The key results for affordability are shown in Tables 2.1-2.3 and Figures 2.1-2.2.

2.3 In 2004 only just over a third of new households (34.2%) could afford to buy in the subregion, even after allowing for wealth (i.e. help from families in the form of gifts, informal loans, inheritance, etc.). The figures varied from 31.6% in BANES to 37.2% in North Somerset.

2.4 Affordability deteriorated sharply between 2002 and 2004, dropping from nearly 42% in that earlier year (range 39-47%). Affordability is projected to improve in the coming period, so that by 2009 it could be slightly better than it was in 2002. For the period as a whole 39.1% can buy on average (range 36-42%). This assumes a moderate price correction (real terms reduction) as noted in Box 2.1 above.

2.5 The national model enables approximate comparisons with wider areas. The position in the WOE subregion is similar to that for the South West as a whole. Affordability is worse in London and parts of the South East, but considerably better in the midlands and north of England.

2.6 Table 2.2 and Figure 2.2 show four variant affordability measures for the subregion over the projection period. Three of these measures relate to house purchase

and display the same pattern over time of deteriorating first and then improving. Affordability for new (under-35) households based on income alone, not adjusting for wealth, is about 5-6% points lower than the figures just reported. Affordability for all non-elderly households, based on income, lies between these two figures – about 3-3.5% points above the under-35 figures. Older households have somewhat higher incomes, and thus some households become able to afford if they wait longer.

2.7 Affordability of private renting for younger households is slightly higher than affordability of house purchase in 2002, but it increases during the projection period, so that at present for example private renting looks significantly more affordable than buying. The underlying assumption is that rents move partly in line with incomes and partly in reflection of house prices.

2.8 More localised (zone-level) measures are mainly discussed in sections 7-10 below. However, looking across the subregion, the most affordable zones for house purchase are Yate-Sodbury (41%), Weston-super-Mare (38%) and North Fringe (37%). The least affordable zones are Bath City (23%), Portishead-Gordano (25%) and Bristol City (Inner NW) (26%).

2.9 The threshold house prices underlying these affordability results are shown and discussed in later sections. A two-bedroom home at the lower quartile cost on average £117,500 in 2004, up from £97,060 in 2002. This is projected to fall to £111,300 by 2009 (in real terms, discounting inflation after 2004). Prices are generally higher in BANES and lower in Bristol. Prices seem to have risen more in the recent period in North Somerset than in South Gloucestershire. The highest prices in the subregion are in Bristol City (Inner NW), Portishead-Gordano, Nailsea-Backwell and Bath City. The lowest prices are in Bristol NE, Inner East and South.

2.10 Two forms of ‘Low Cost Home Ownership’ (LCHO) are modelled and results are shown in the columns 5 and 6 of Table 2.3. Shared ownership refers to a minimum 25% share purchased of a new RSL dwelling, with the remaining 75% rented; while Homebuy refers to a 75% share purchased of a cheaper secondhand dwelling (based on threshold prices) using an ‘equity loan’ mechanism to cover the remaining 25% share. The results show that up to 14% extra households could afford Shared Ownership while up to 16% extra could afford Homebuy (these groups largely overlap). In proportional terms, the scope for these schemes to widen affordability is somewhat greater in South Gloucestershire and a bit less in Bristol City. (The model for shared ownership makes relatively optimistic assumptions about the financing of this tenure)

Table 2.1: Affordability: adjusted % able to buy (adj for wealth) by year and local authority

	2002	2004	2006	2009	Average
Bath & N E Somerset	38.7	31.6	35.1	39.5	36.2
Bristol	39.8	32.5	35.9	40.0	37.0
N Soms	47.1	37.2	41.1	46.0	42.8
S Glos	43.7	36.6	40.6	45.5	41.6
WoE Subregion	41.9	34.2	37.9	42.4	39.1

Table 2.2: Affordability Rates Comparison over Time

	2002	2004	2006	2009
U35 Unadj	35.7	28.1	32.0	36.5
U35 Wlth Adj	41.9	34.2	37.9	42.4
U60 Unadj	39.4	31.5	35.2	39.6
U35 Pr Rent	43.5	46.0	48.2	50.7

Table 2.3: Affordability Measures by Local Authority, 2006

Zones WoE HNAFF study	Able to Buy unadj	ATB Wealth-adjusted	ATB Working	ATB all non-elderly	Shared Own'p	Homebuy	Private Rent
Bath & N E Somerset	27.9	35.1	35.4	30.7	14.6	16.2	45.7
Bristol	30.6	35.9	39.7	33.7	11.2	14.9	41.9
N Soms	34.0	41.1	42.6	37.4	15.4	17.2	56.7
S Glos	35.4	40.6	44.2	39.1	18.5	17.3	53.8
WoE Subregion	32.0	37.9	40.6	35.2	14.4	16.1	48.2

Figure 2.1

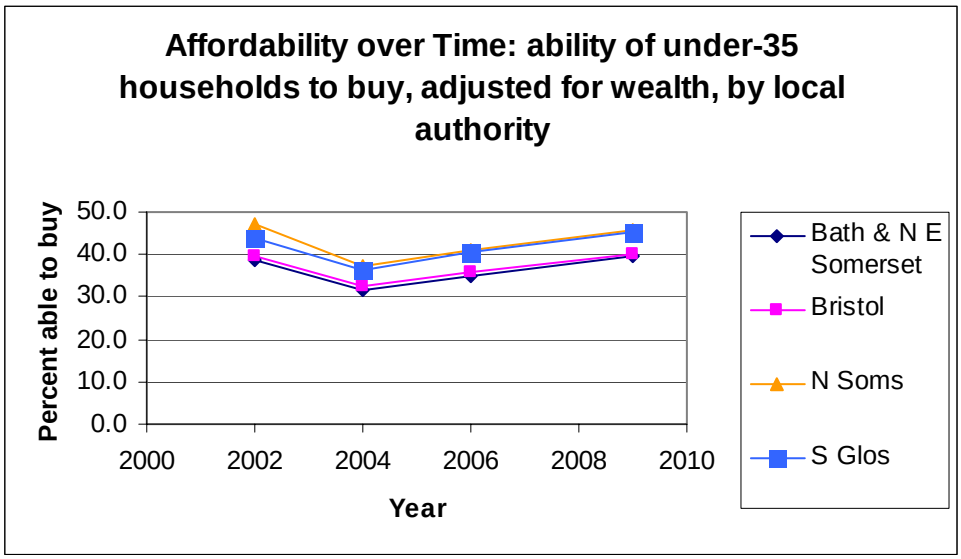
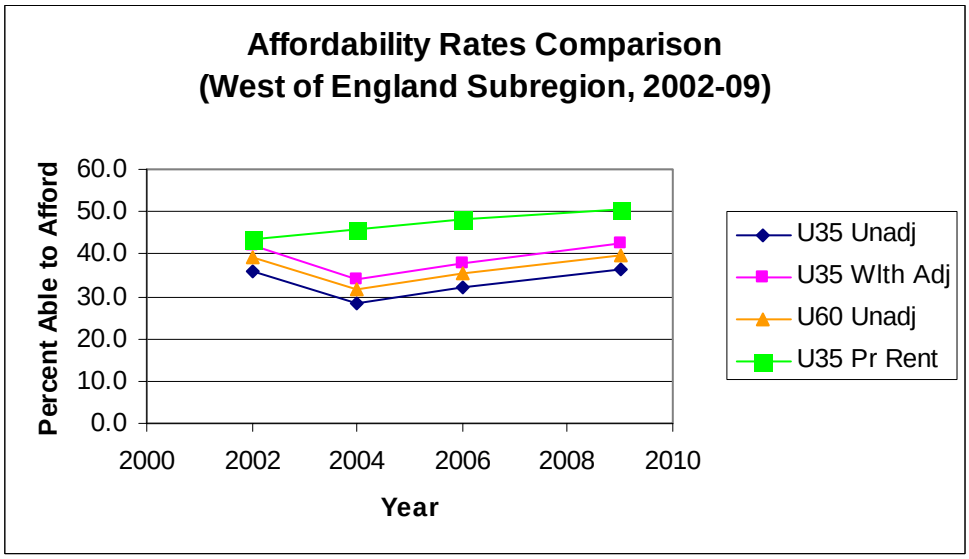


Figure 2.2



3. Key Results: Housing Need

Box 3.1: Steps in Calculation of Net Need

Net Need (units per year)

=

Gross Household Formation x % <35 unable to buy (adj for wealth)

+ proportion (33%) x net migration (household equiv) x % <35 unable to buy

+ proportion (0.234%) x owner occupier households (moving to social renting)

+ proportion (10%) x waiting list 'backlog' above need threshold

- net relets of social rented housing

3.1 Box 3.1 summarises the main steps in the calculation of the need for additional affordable housing. Annex A shows how this relates to the DETR (2000) Guidance, while Annex B provides more detail on the calculations.

3.2 The key estimates of net need for affordable housing are shown in Tables 3.1-3.3 and Figures 3.1-3.3. The figures are expressed as number of households/units per year. Net need rises from 3537 in 2002 to 4422 in 2004, then falling back to 3038 by 2009, with an average over the period of 3713 (Table 3.1). Under the baseline assumptions for this study, only one of the 19 zones in the subregion had an annual surplus of affordable housing in 2006.

3.3 Table 3.2 shows some key demographic information alongside relets and net need, across the local authorities for 2006. For the whole subregion in that year, net needs would be of only slightly smaller magnitude than overall household/dwelling growth. This point is discussed further in section 5 below.

3.4 This table (3.2) also shows the estimated new household numbers forming each year in each zone. It is these numbers to which the affordability rates are applied. For the whole subregion, the number of new households expected to form in 2006 is 8615. It should be noted that this number is roughly double the net increase in households/dwellings; the difference is accounted for by household dissolutions and net migration. There are significant numbers for gross household formation in all zones, even those with very little net household/dwelling growth. These numbers are based on population in the key younger age groups, with an adjustment to exclude the majority of students.

3.5 The third column of Table 3.2 shows the net relets of social housing estimated for 2006. This is important as the main source of supply to meet need; net need deducts relets from gross need (see Box 2.1). Relets are based on detailed data supplied by the authorities at zone level for 2004, with other years modelled as variations from these base rates (see Annex 2). Net need exceeds relets in three of the

four authorities. In Bristol, although all figures are larger in absolute terms, the relative disproportion of net need and supply is less acute.

3.6 Table 3.3 shows the various components which go into the need calculation, using figures for 2006. The largest element is new households unable to buy, 5352 in all. Additions are made for net migrants unable to afford (660) and for existing owner occupiers moving into social housing (750), plus the 10% quota from the backlog (1488). On the supply side are 4396 net relets, giving the balance of net need (3855).

3.7 Figure 3.2 standardises for the size of the areas in terms of number of households. This shows that net or positive needs are generally lower, relative to size of household population, in Bristol, and pretty similar across the other three authorities. In 2002, South Gloucestershire had the highest rate of net need on this measure. But by 2009, North Somerset is likely to show a higher score.

3.8 Table 3.3 (column 2) shows the amount of new affordable need which could in theory be met by shared ownership or equivalent LCHO provision, in 2006. This relates to new households and migrants, and makes optimistic assumptions about the funding and terms of shared ownership, in particular that 25% minimum tranches are available, as is common practice in London and the South East. (Bramley et al 2002 evaluation report to ODPM, Home Ownership Task Force Report 2003). However, it is noted that 40% and 50% tranches are more usual in the subregion. On the other hand the model makes no allowance for possible use of shared ownership to accommodate existing social tenants, thereby releasing vacancies for households needing social rented accommodation. This indicates that LCHO could play a very significant role in meeting needs within this subregion. The entry threshold for shared ownership modelled here is a 25% minimum tranche of a new build unit. Section 6 below looks at the effect of varying the assumed minimum tranche purchaseable using shared ownership.

3.9 Figure 3.3 looks at the potential need/demand for shared ownership (or equivalent intermediate options) by local authority and year. The Figure suggests that there is substantial scope for intermediate provision in all the authorities, with at least 150 units per year in each of the authorities. The model also looks at affordability and need/demand potential for Homebuy equity loans on the current 75/25 model applied to secondhand housing (at threshold prices).

3.10 The national model enables us to relate need in the West of England to national totals on a comparable basis. This indicates that the subregion currently accounts for 2.72% of all affordable housing needs in England. Of this share, 1.1% would be for Bristol, 0.85% for South Gloucestershire, 0.45% for North Somerset and 0.31% for BANES.

Table 3.1 Net need for additional affordable housing by local authority and year*

Local Authority	*2002*	*2004*	*2006*	*2009*	*average*
Bath & N E Somerset	639	771	685	562	664
Bristol	937	1229	935	626	932
N Soms	808	1094	1067	890	965
S Glos	1154	1327	1169	960	1152
WoE Subregion	3537	4422	3855	3038	3713

Table 3.2: Household growth, new household formation, relets and net need by local authority in 2006*

Local Authority	*Househd Growth*	*Gross New Houshd Formation*	*Net Social Relets*	*Net Need*
Bath & N E Somerset	381	1340	565	685
Bristol	1244	3333	2448	935
N Soms	1087	1789	669	1067
S Glos	1233	2154	714	1169
WoE Subregion	3945	8615	4396	3855

Table 3.3 Components of need in 2006 by local authority*

Local Authority	*New Un-affordable Houshds*	*Of which afford Shd Ownership Min 25% tranche*	*Net Migrants Unafford*	*Moves from OO to Social*	*Allowance for Backlog @ 10%*	*Net Social Relets*	*Net Need*
Bath & N E Somerset	867	171	41	124	219	565	685
Bristol	2145	165	202	263	772	2448	935
N Somerset	1059	278	263	163	250	669	1067
S Gloucestershire	1281	357	155	200	247	714	1169
Total	5352	971	660	750	1488	4396	3855

*Figure 3.1**

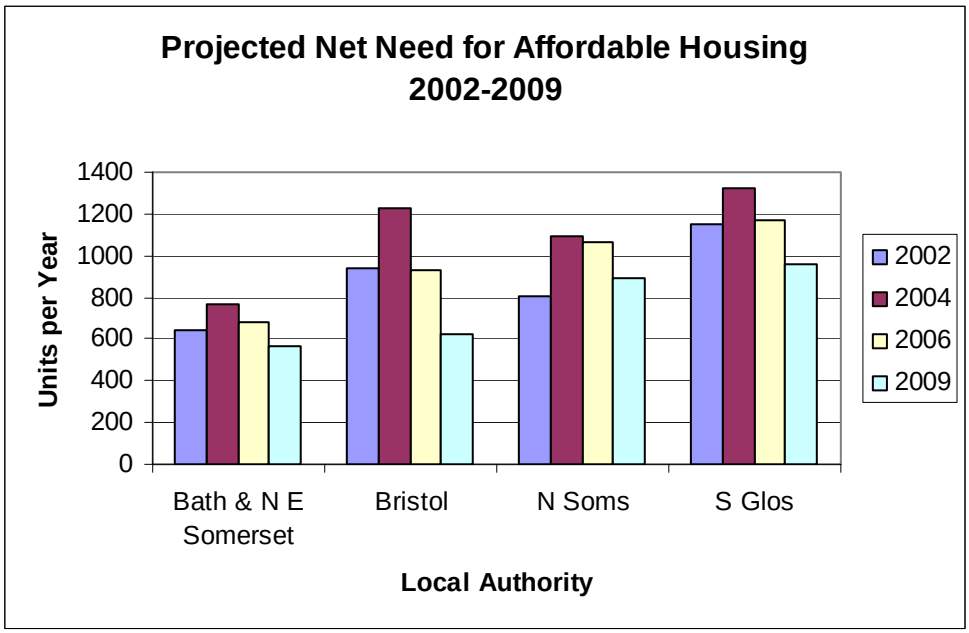


*Figure 3.2**

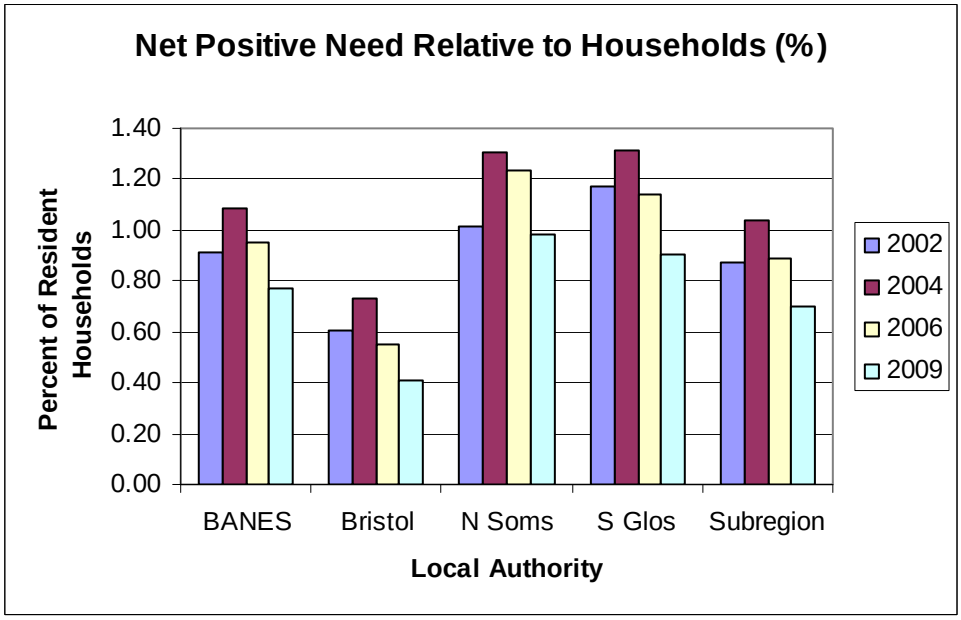
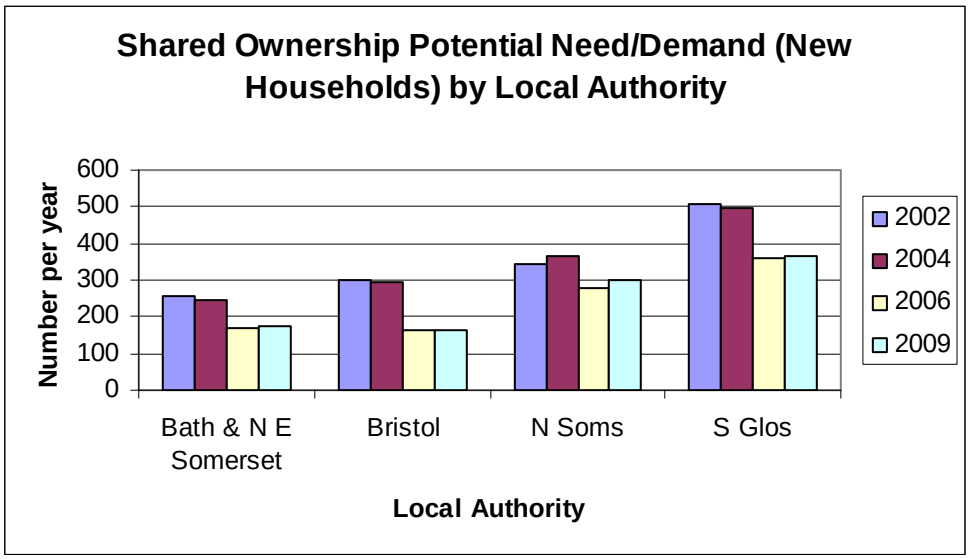


Figure 3.3



Note: Modelled at Minimum 25% Shared Ownership Tranche

4. Size Mix of Needs and Supply

4.1 It is possible to use the model to estimate the approximate mix of needs compared with supply by size of dwelling. These estimates are approximate and subject to somewhat greater uncertainty than some other elements of the calculation. Three broad size groups are used: one bedroom, two bedroom, and three-plus bedrooms. This detailed analysis is carried out for Bath and NES, Bristol and North Somerset.

4.2 For a detailed analysis of unit type and size mix of affordable housing need in South Gloucestershire, please refer to the John Herington Associates Housing Needs Survey 2004.

Box 4.1: Method of Estimating Size Mix of Needs

- Relets supply is broken down by size using information supplied by the local authorities on recent lettings, excluding transfers. These are grossed up proportionately to allow for RSL relets (for which detailed size breakdown is not available, except in BANES).
- New households unable to afford to buy can be broken down by size based on the household type structure which is built into the affordability model.
- The model estimates the size mix of intermediate sector need (based on affording shared ownership) in the same way.
- Two adjustments are made to the model figures, (a) to allow for the wealth adjustment, which is global, and (b) to allow for the fact that the model normally splits two-adult households between one and two bedroom (for the this particular analysis, we also show the effect of allocating all two-adult households to one bedroom)
- The same mix is applied to net migrant affordable need.
- Former owner occupiers needing social housing are split in the ratios 50%, 40% and 10% (based on evidence from SEH).
- The quota of need from the backlog is based on the size mix analysis of the waiting lists (above need thresholds) as provided by the local authorities.

4.3 The adjustment mentioned in Box 4.1, bullet point 4 (b), is quite significant. The core model assumption is that two-adult households (e.g. childless couples) are divided equally between one and two bedroom requirements. The underlying logic is that many such households would look for at least two bedrooms and would expect such accommodation, particularly if exercising a degree of choice (as in LCHO). Social landlords, however, would tend to allocate such households to one-bedroom accommodation, unless their supply situation was relatively favourable for two-bedroom units. Therefore, for the specific purpose of this size analysis we also show the effect of adjusting the figures for net rental need to reflect an assumption that (under current conditions in this region) social landlords would allocate the minimum one-bedroom unit to most or all of these households.

4.4 Table 4.1 shows the split of net affordable need (after allowing for relets) between the three size groups, for Bath and NES, Bristol and North Somerset. Part (a) of Table 4.1 shows the results when two-adult households are split between one- and two-bedroom accommodation. For the subregion as a whole, one bedroom needs are about 37%, while two-bedroom needs are about 36%, with about 28% needing three or more bedrooms. . However, there is considerable variation between localities within the subregion. One-bedroom needs are greatest in Bristol . Three-plus needs are greatest in North Somerset.

4.5 Part (b) of Table 4.1 shows the results with the conservative fitting standard (all two-adult households to one-bedroom). The general picture across the subregion is then that half of the net need is for one-bedroom accommodation, with two-bedroom needs smaller than the three-plus bedroom category. In North Somerset one-bedroom needs would still be a minority, this authority also has the highest proportion of three-bed needs.

4.6 Figure 4.1 shows that, although one-bed relets are most common, net needs for both rental and intermediate accommodation are still large. For two-bed accommodation, the excess of needs over relets is less, but the share of intermediate is also greater. For three-plus bedrooms, relets supply is low (effects of RTB and the greater stability of mature families), so that there is still a relatively large excess of need. In this case most of it is in the rental rather than the intermediate sector.

4.7 Figure 4.2 looks at the same information the other way round. It shows clearly the very different size mix profiles of relets, net rental need and intermediate need. Relets are skewed to smaller accommodation. Rental needs are somewhat polarised with more one- and three-bed requirements. Intermediate needs are skewed towards 2-bedroom.

4.8 It is worth noting that the waiting list data shows an even stronger skew towards one bed needs than this overall flows analysis. Across the subregion, 67% of applicants above the need threshold are eligible for one bedroom, 23% for two bedroom and only 10% for larger accommodation. This information is reflected in only a muted way in the flows analysis, because we are taking only a conservatively small quota from the backlog. One point which should be remembered about the waiting lists, however, is that these include elderly households, which will be predominantly small. The Survey of English Housing also indicates that at least half of owners moving to social renting would be one-bedroom cases, with relatively few three-bedroom.

4.9 One issue arising in planning negotiations over new developments is the size and type mix of new affordable provision within mixed developments. Developers sometimes seek to provide smaller units in the form of flats. It should be noted in this context that most of the potential need for 2-bedroom accommodation is for families with children. The model indicates that, when 2-adult households are split between one- and two-bedroom, 77% of gross affordable need for 2-bedroom units is from families with children. If all 2-adult households were allocated to 1-bedroom, all of the (smaller) 2-bed need would be for families. The 3-bed needs are mainly for families, including families with grown-up children, plus some other complex and sharing households. There would be a widespread presumption that houses are preferred over flats for families with children.

4.10 In considering programmes of provision, these estimates of size needs should be treated with some caution and there may be wider considerations. Taking a longer view, it may be prudent to reflect the general upward shift over time in people's housing space expectations. There is evidence from both social and private sectors that small accommodation is becoming less acceptable. It is possible to use the model to look at alternative assumptions, as we have for example in relation to two-adult households.

Table 4.1: Percent of all net need including intermediate sector by bedroom size and local authority (2006)*

(a) splitting 2-adult households between 1- and 2-bedroom

Local Authority	*1 Bed*	*2 Bed*	*3+ Bed*
Bath & N E Somerset	34.3	38.8	26.9
Bristol	50.5	23.5	26.1
N Somerset	33.3	36.4	30.3

(b) allocating all 2-adult households to 1-bedroom

Local Authority	*1 Bed*	*2 Bed*	*3+ Bed*
Bath & N E Somerset	46.8	26.3	26.9
Bristol	67.6	6.4	26.1
N Somerset	45.8	23.9	30.3

*Figure 4.1**

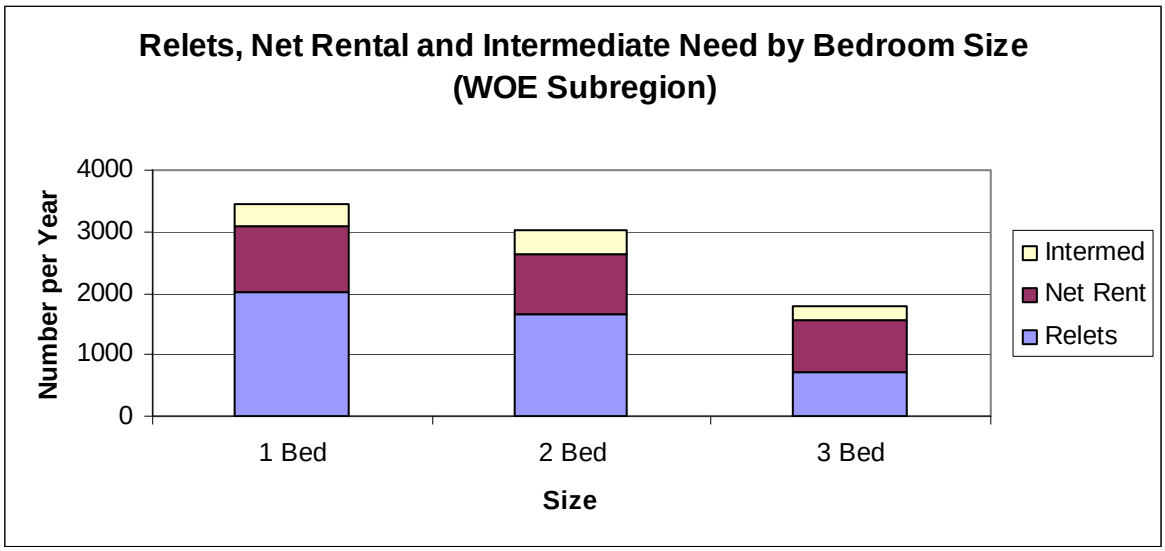
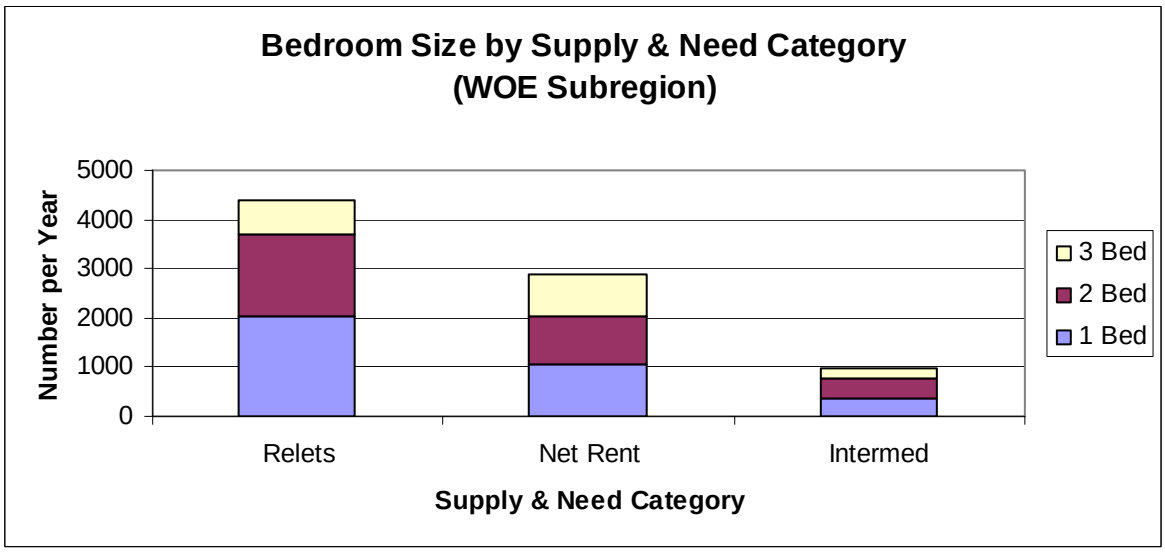


*Figure 4.2**



5. Need, New Development and Affordable Provision

5.1 This section briefly considers the relationship between affordable housing need, the amount of new housing development expected and the part of that which is affordable. Table 5.1 compares the key numbers for the local authorities.

5.2 The level of affordable housing need appears to be almost as great as the expected total increase in households /dwellings. The latter figure reflects expected housebuilding levels based on planning information about land available (broadly consistent with population and household projections). It must be noted that this is a relatively unusual situation, which is indicative that this area is under considerable housing pressure. Need exceeds household/dwelling growth in BANES by a considerable margin, while in the other three authorities the numbers are similar. The position varies more sharply at zonal level, as discussed further in sections 7-10.

5.3 The level of new housing development (the sum of columns 3 and 4 in Table 5.1) is very similar to the projected level for the subregion as a whole[3]. However, recent rates of development have exceeded the projected level in Bristol and North Somerset while falling somewhat short in the other two districts. The final column of Table 5.1 shows the projected annual level of new RSL development in the next 2-3 years. In general, the local authorities are looking for an increase in affordable housing output[4]. Even with this increase in affordable output, there would still appear to be a considerable shortfall relative to need.

Table 5.1: Affordable Housing Needs compared with Actual and Projected Development by Sector (number per annum)*

Local Authority	*Net Need Aff Hsg*	*Dwelling / Household Growth*	*Net Gain RSL 2001-4*	*Net Gain Private 2001-04*	*Projected RSL 2004-07*
Bath & N E Somerset	685	381	44	254	111
Bristol	935	1244	221	1398	501
N Somerset	1067	1087	82	1118	270
S Gloucestershire	1169	1233	142	719	141
Total	3855	3945	489	3490	1023

Note: col. 2 is projected dwelling growth based on household projections and land available for development.
Projected RSL is based on LA programme information, except S Glos which is based on previous period.

[3] Strictly what is shown here is 'net gain' in private and RSL dwellings, allowing for conversions and demolitions, which are quite significant in Bristol City.
[4] Figures shown for South Gloucestershire were not available in the same form, so the figure shown is based on the preceding period.

6. Sensitivity of Results to Assumptions

6.1 It is always desirable to subject a model such as this to sensitivity tests. These can show both how robust the results are and also what the likely impact would be if and when certain plausible changes occur in underlying economic conditions or policy assumptions. These tests look at the impact of some of the most important variables, with results reported in Tables 6.1-6.8.

House Prices

6.2 House prices are one of the most volatile and unpredictable factors and these are clearly very important in an affordability-based model. It is useful to know what the impact of a 10% difference in house prices would be as a sort of ready-reckoner. Table 6.1 shows the impact of a 10% price reduction on the various affordability measures in 2006. Ability to buy would rise by 5-6% points for new households (5.6% is the regional average on a wealth-adjusted basis). The impact is slightly lower in Bristol and highest in South Gloucestershire, but the differences are not great. The figure is slightly higher for working households (a smaller subgroup who are more concentrated, currently, around the thresholds). Lower house prices would have a modest negative impact on the proportion of households affording intermediate options but not full purchase. There would be a small positive impact on private rental affordability.

6.3 Table 6.2 shows the consequential effects of a 10% house price reduction on needs. The model incorporates feedback effects on relets, amounting to 53 extra lettings per year, as well as the main effect through ability to buy. Need needs would fall by a sizeable 549 units per year, a 15% reduction. In percentage terms this would be greatest in Bristol and similar in the other three authorities.

6.4 Table 6.6 summarises the impact of the opposite assumption, that house prices turn out to be higher than in the baseline projection. Assuming constant real house prices after 2004, the effect is equivalent to 10% higher prices in 2006 (because the core assumption is of prices falling back in real terms after 2004). The impact is pretty close to a mirror image of that just reported. Affordability would be 5.4% points lower, relets would be 59 units lower, and net need would be 582 units (15%) higher.

Affordability Ratios

6.5 Affordability also depends upon the norms applied, particularly the standard lending multipliers, and also to some extent on interest rates (and these factors may be related). This is illustrated by showing the impact of raising the lending multiplier for a single earner from 3.5 to 4.0 and lowering the interest rate in 2006 to 5%. This is not necessarily a very prudent assumption, although it might be argued that if the regime looked set to be one of continuing low interest rates there could be a case for doing this in a relatively high price region.

6.6 Table 6.3 shows the impact on the affordability proportions. The key measure (wealth adjusted) rises by 7.1% points, rather more than that shown for 10% lower prices. Again there are only slight local variations, with higher impacts for working households. The incremental proportion affording shared ownership rises slightly, while the Homebuy share falls slightly.

6.7 Table 6.4 shows the impact on needs. Net relets would rise by 154, and net needs would fall by more than a fifth, or 733 units per year. Again, the impact is greatest in Bristol and least in North Somerset.

Higher Household Growth

6.8 In view of the issues about planning and household growth numbers discussed in the previous section, there is a case for testing the impact through the model of higher household numbers. Table 6.5 reports the impact of one such (simplified) scenario, involving a 25% increase in household growth distributed uniformly (ie. pro rata existing household numbers) across the zones. There would be just over a thousand extra households (and new dwellings) per year across the subregion. Gross household formation would rise slightly (but progressively more in later years). Net needs would increase by 254 units per year, due to the greater household formation and the substantially greater net in-migration. This increase in net need would be about 6.6% overall, but more in proportional terms in Bristol. In general, greater household and dwelling growth increases the base quantity of new housing development for which affordable housing content could be negotiated through the planning system.

Shared Ownership assumptions

6.9 In the baseline it is assumed that shared ownership is available down to the minimum purchased tranche of 25% (25% owned, 75% rented). This measures the maximum potential reach of this tenure for new households. The practical financing arrangements for shared ownership may make it difficult to offer many tranches as low as 25%. A typical average is usually around 40%, and many shared owners buy a 50% share. Table 6.7 shows the impact of assuming 40% or 50% minimum tranche levels on incremental affordability and potential need numbers for this form of LCHO. Compared with the baseline, a minimum share of 40% would halve the potential need/demand, whilst a minimum of 50% would reduce it by three quarters.

Excluding different categories of need

6.10 The baseline assessment adopts a fairly comprehensive approach to assessing the needs for additional affordable housing, although it does not address issues relating to housing condition (e.g. replacement needs). It could be argued that some categories of need are of lower priority, or might be met by other routes than new building. Table 6.8 illustrates this by showing the impact of excluding various categories of need on the net need numbers.

6.11 The first alternative shown is the effect of removing any contribution to reducing the backlog. While this would deviate from the recommendations of the DETR (2000) guidance, it could be said that this provides an indication of the level of need which would have to be met if the backlog were not to worsen over time. This alternative has a major effect in Bristol, reducing the net need from 935 to 162 units per year. This indicates that (a) Bristol needs are more dominated by the backlog, but (b) progress in reducing that backlog is more feasible in Bristol at projected levels of provision (shown in Table 5.1 as around 500 units per year). In the other three authorities, net needs are still far higher than projected provision even after discounting the backlog.

6.12 The second alternative is to exclude needs which could be met by Homebuy, by households moving to cheaper zones, and/or needs which might be met in the private rented sector. The rationale for treating Homebuy separately is that this form of LCHO mainly accesses existing housing, rather than new build. In addition, there is a good prospect that, based on current discussions between the Council of Mortgage Lenders and the Government (reflected in the Budget announcement), future Homebuy may be largely funded by lenders. Moving to cheaper areas is modelled by looking at those new households unable to afford in their origin zone who could afford to buy in one of the four cheapest zones in the subregion, where threshold prices are below £100,000 for a two-bedroom unit. It is estimated that 724 households could move to buy in this way (and that there would be sufficient lower priced units for sale in the cheaper zones to accommodate them). The rationale for assuming some needs may be met within the private rented sector is the finding reported earlier that currently private renting is somewhat more affordable than market purchase. The allowance in Table 6.8 is based on households able to afford market rents but not house purchase, times the annual turnover in the PRS, times a proportion (based on SEH analysis) representing local people moving into PRS. Because these three options overlap, applying to essentially the same set of marginal unaffordable households, we simply deduct the largest of the three figures for the three different options (usually this is the Homebuy figure). Under this scenario, net needs would fall from 3855 to 2810.

6.13 The third alternative is to cut by half the allowances for net migrants unable to afford to buy, and for owner occupiers assumed to move into social renting. These assumptions might be justified on the grounds that, in view of the shortage in the region, migrants and owners would be a lower priority group than across the country as a whole. This would bring about a reduction in net need of about a 700.

6.14 It is not recommended that the full amount of any or all of these exclusions is factored into the main assessment. It would be a strong assumption that anything like a thousand units of Homebuy could be delivered, for example, or that the private rented sector could go on soaking up excess need indefinitely. However, it is more plausible that most of the marginal affordable group could access either Homebuy or cheaper zones or private rental. Similarly, it is very questionable whether migrants should be excluded, and the proportion who have affordability issues may be greater rather than less than assumed in the baseline. The purpose of this table is simply to show the scale of the impact of excluding these various groups. Clearly, this is very substantial in crude numerical terms. It does illustrate also, to some extent, the kind of impact that continuing restrictions on supply are likely to have, i.e. that some of these groups would be ‘rationed out’ and that there would not be much scope for reducing the backlog, except in Bristol.

Table 6.1: Impact of 10% lower house prices on affordability measures (% point difference, 2006)

	Able to Buy (income)	*Wealth Adjusted ATB*	*ATB Working*	*ATB all non-eld*	*IShared Ownership Increment*	*Homebuy Increment*	*Afford Private Renting*
Bath & N E Somerset	5.8	5.5	6.7	5.8	-0.3	0.0	1.0
Bristol	5.4	5.1	6.5	5.6	-0.3	-0.3	1.1
N Somerset	6.3	5.9	7.2	6.3	-0.6	-0.5	0.8
S Gloucestershire	6.5	6.1	7.3	6.4	-1.1	-0.8	0.9
Total	5.9	5.6	6.9	5.9	-0.6	-0.4	1.0

Table 6.2: Impact of 10% lower house prices on relets and net needs*
(annual , 2006)

Local Authority	*Net Relets*	*Net Need*	*Positive Need*	*net need %*
Bath & N E Somerset	9	-86	-86	-13
Bristol	29	-214	-170	-23
N Somerset	7	-137	-137	-13
S Gloucestershire	9	-156	-156	-13
Total	53	-593	-549	-15

Table 6.3: Impact of Higher Lending Multiplier and lower interest rates on afffordability measures (% points 2006)

Local Authority	*Able to Buy (income)*	*Wealth Adjusted ATB*	*ATB Working*	*ATB all non-eld*	*IShared Ownership Increment*	*Homebuy Increment*
Bath & N E Somerset	7.4	6.9	8.5	7.4	1.8	-0.1
Bristol	6.9	6.5	8.2	7.0	1.8	-0.4
N Somerset	8.0	7.4	9.1	7.9	1.5	-0.7
S Gloucestershire	8.2	7.7	9.2	8.0	0.7	-1.0
Total	7.5	7.1	8.7	7.5	1.5	-0.6

Note: lending multiplier of 4.0, interest rate 5%

Table 6.4: Impact of Higher Lending Multiplier and lower interest rates on relets and net need (annual, 2006)*

Local Authority	*Net Relets*	*Net Need*	*Positive Need*	*net need %*
Bath & N E Somerset	25	-123	-123	-18
Bristol	83	-318	-213	-34
N Somerset	20	-186	-186	-17
S Gloucestershire	26	-212	-212	-18
Total	154	-839	-733	-22

Note: lending multiplier of 4.0, interest rate 5%

Table 6.5: Impact of 25% higher household growth on household formation and net needs (annual, 2006)*

Local Authority	Household Growth	Gross New Households	Net Need	net need %
Bath & N E Somerset	181	1	42	6.2
Bristol	435	2	102	10.9
N Somerset	223	1	50	4.7
S Gloucestershire	266	1	60	5.1
Total	1105	5	254	6.6

Note: uniform increase in household growth in all zones

Table 6.6: Impact of Constant Real House Prices after 2004*
(key affordability and numbers in 2006)

Local Authority	*Afford to Buy %*	*Net Relets*	*Net Need*	*% change net need*
Bath & N E Somerset	-5.2	-10	82	12.0
Bristol	-5.0	-32	212	22.7
N Somerset	-5.7	-8	134	12.6
S Gloucestershire	-5.9	-10	153	13.1
Total	-5.4	-59	582	15.1

Note: this is effectively equivalent to 10% higher house prices in 2006, relative to baseline.

Table 6.7: Impact of Different Minimum Tranches on Affordability and Need for Shared Ownership (2006)

	Incremental Affordability %			*Potential Need/Demand No pa*		
	Baseline	*Difference*	*Difference*	*Baseline*	*Difference*	*Difference*
Local Authority	*Min 25%*	*Min 40%*	*Min 50%*	*Min 25%*	*Min 40%*	*Min 50%*
Bath & N E Somerset	14.6	-7.1	-11.1	181	-83	-131
Bristol	11.2	-6.2	-8.9	244	-135	-188
N Somerset	15.4	-7.6	-12.2	278	-137	-219
S Gloucestershire	18.5	-7.3	-12.0	373	-149	-243
Total	14.4	-6.9	-10.6	1076	-506	-782

Table 6.8: Alternative Net Need Numbers excluding various need categories
(number pa, 2006)*

Local Authority	Baseline Net Need	Alt 1 - Backlog	Alt 2 -HB/PR/MD	Alt 3 -0.5Mig/Own
Bath & N E Somerset	685	466	506	602
Bristol	935	162	716	702
N Somerset	1067	817	757	853
S Gloucestershire	1169	922	830	992
Total	3855	2367	2810	3150

Note: Alt 2 deducts the largest of Homebuy, private rental, or able to buy in cheaper zones figures.

Bath and North East Somerset

7.1 In this section we describe the situation in this local authority in more detail, referring to tables which show key results for the four zones within BANES and drawing attention to particular salient features.

7.2 Affordability is generally more difficult in BANES than in the subregion as a whole. Within the district, affordability is most acute in Bath City, followed by Keynsham, with somewhat greater affordability in Midsomer Norton-Radstock and the rural area (Table 7.1). This reflects the particularly high house prices in Bath City, compared with the somewhat lower prices in Midsomer Norton-Radstock (Table 7.7). Incomes are rather lower in Bath City and markedly higher in the rural area (Table 7.8). The wealth adjustment factor in the affordability calculation is relatively large in this district, particularly in the rural area (Table 7.2).

7.3 Affordability of intermediate tenure options is markedly greater in Midsomer Norton and especially in the rural area. This is particularly true of shared ownership, but also applies to private renting (Tables 7.2, 7.6).

7.4 Two-fifths of the overall net need in BANES is concentrated in Bath City. The next largest number is in Midsomer Norton-Radstock. (Table 7.3). This reflects differences in population size of these zones. In three zones, net need substantially exceeds projected new dwellings/households (Table 7.4).

7.5 Relet rates are generally low in BANES (only 4.4%, see Table 7.6), and relet numbers are rather concentrated in Bath City, reflecting the distribution of the RSL stock. There are relatively few relets in the rural area or Keynsham. (Table 7.4).

7.6 Newly forming households unable to afford to buy are the dominant group contributing to needs in BANES, and this is true throughout the district (Table 7.5). The backlog is the next largest source of need, and this is rather more significant in Bath City.

7.7 Net need relative to the existing household population is greatest in Keynsham and Midsomer Norton-Radstock (Table 7.6). However, these ratios are relatively high throughout the authority.

7.8 In Bath City, social rented needs are skewed towards smaller (one bedroom units) (Table 7.9). In Keynsham and the rural area 2-bedroom needs are more important. Intermediate sector need is generally skewed towards small units, but this is rather less so in Midsomer Norton-Radstock and the rural area.

Tables for BANES

Table 7.1 ***Affordability: percent of new households able to buy (adj for wealth***)

	2002	*2004*	*2006*	*2009*	*Average*
Bath City	34.6	27.1	30.1	34.0	31.4
Keynsham	37.7	29.3	32.1	35.5	33.6
Mids Norton-Radstock	45.2	37.4	41.8	47.3	42.9
N E Soms Rural	42.7	39.0	43.0	48.2	43.2
Bath & N E Soms	38.7	31.6	35.1	39.5	36.2

Table 7.2 ***Affordability Measures for 2006 (%)***

	Can Buy Income	*Can Buy wealth-adj*	*Can Buy working*	*Can Buy All<60*	*Shared Own*	*Homebuy 75%*	*Private Rent*
Bath City	22.9	30.1	29.7	24.5	9.9	14.8	36.4
Keynsham	24.9	32.1	32.9	29.7	12.5	16.4	48.8
Mids Norton-Radstock	35.3	41.8	43.7	39.1	20.6	17.8	54.6
N E Soms Rural	35.0	43.0	43.2	38.9	22.4	18.2	59.4
Bath & N E Soms	27.9	35.1	35.4	30.7	14.6	16.2	45.7

Note: Shared own & Homebuy are incremental %

Table 7.3 ***Net Need for Affordable Housing (no per year***)*

	2002	*2004*	*2006*	*2009*	*Average*
Bath City	238	314	278	241	268
Keynsham	96	111	100	82	97
Mids Norton-Radstock	171	206	187	155	180
N E Soms Rural	134	140	120	84	119
Bath & N E Soms	639	771	685	562	664

Table 7.4 ***Overall Need Numbers for 2006****

	House-hold Growth	*Gross Hshd Formation*	*Net Relets*	*Net Need*
Bath City	273	626	373	278
Keynsham	17	165	49	100
Mids Norton-Radstock	85	329	91	187
N E Soms Rural	6	219	53	120
Bath & N E Soms	381	1340	565	685

Table 7.5 ***Components of Need for 2006****

	New hhd unafford	*Net migrants unafford*	*Owners -> soc rent*	*Backlog @ 10%*	*Shared Own*	*Homebuy*
Bath City	438	24	58	131	45	68
Keynsham	112	0	16	21	20	26
Mids Norton-Radstock	192	15	31	41	68	58
N E Soms Rural	125	1	21	26	49	39
Bath & N E Soms	867	41	124	219	181	191

Note: Shared own & Homebuy overlap with col 1 and each other

Table 7.6 ***Relets and Need as Percentage Rates in 2006****

	Net Relets % SR stock	*Net Need % hshlds*	*Shared Own % hshlds*
Bath City	4.79	0.74	0.12
Keynsham	3.33	1.21	0.24
Mids Norton-Radstock	4.37	1.19	0.43
N E Soms Rural	3.81	1.10	0.45
Bath & N E Soms	4.37	0.95	0.26

Table 7.7 ***Threshold House Prices (2-Bed)***

	2002	*2004*	*2006*	*2009*	*Average*
Bath City	114933	141028	136489	133603	131513
Keynsham	106588	129689	125516	122861	121164
Mids Norton-Radstock	91565	110711	107148	104882	103577
N E Soms Rural	113433	127600	123494	120882	121352
Bath & N E Soms	108460	130715	126508	123833	122379

Note: 2006 & 2009 discount inflation after 2004

Table 7.8 ***Mean Gross Weekly Household Income (all ages)***

	2002	*2004*	*2006*	*2009*
Bath City	530	556	573	600
Keynsham	562	590	608	635
Mids Norton-Radstock	555	591	618	661
N E Soms Rural	648	693	726	780
Bath & N E Soms	558	590	612	647

Note: 2006 & 2009 discount inflation after 2004

Table 7.9: Size Mix of Net Social Rent Need and Intermediate Sector Need in 2006*

(Annual number)

	Net Social Rent Need			*Intermediate Sector Need*		
	1 bed	*2 bed*	*3+ bed*	*1 bed*	*2 bed*	*3+ bed*
Bath City	94	72	73	18	15	7
Keynsham	13	40	29	6	8	4
Mids Norton-Radstock	50	46	25	22	28	16
N E Soms Rural	19	36	18	14	20	13
Bath & N E Soms	175	194	144	60	71	40

8. Bristol City

8.1 Affordability for Bristol City is slightly below the subregional average (Table 8.1). There is surprisingly little variation across the zones, apart from the fact that Inner North West has much lower affordability because of its exceptionally high house prices (Table 8.7). Across the other areas, although prices are relatively low for the subregion, incomes are also relatively low (Table 8.8). The areas with the lowest house prices, Outer NE and Inner East, are also the poorest areas.

8.2 The scope for shared ownership is relatively low in Outer North West and relatively high in Outer East (Table 8.2). Private renting is not that affordable in Inner NW but it is still more affordable than buying. Outer NW is most affordable for private renting.

8.3 Two areas rather dominate the picture in terms of generating net needs, Inner NW and Outer East (Table 8.3). Although most zones show positive net needs throughout the baseline projection, in three zones these numbers are not very large and might turn to surpluses under more favourable assumptions, or by the end of the period (Inner East, Outer North West, South). The zone where there is a general tendency to surplus is Inner East.

8.4 Net needs are less than household/dwelling growth in four zones, Outer NW and NE, South and Inner East (Table 8.4). The latter area has quite a large projected level of development. There is sizeable gross new household formation in all zones. Relets are greatest in Bristol South, Inner East and Outer NW, reflecting both the location of the social rented stock and relet rates, which are also relatively high in these zones (Table 8.6).

8.5 In Bristol the backlog is a larger element in the sources of need than in the other authorities. The backlog is particularly important in Inner East but also in Outer East and South (Table 8.5). The numerical potential demand for intermediate provision is greatest in Outer East and Inner NW.

8.6 The intensity of net need, relative to the existing household population, varies widely within Bristol City. It is greatest in Inner NW and Outer East, and least in Inner East, Outer NW and South (Table 8.6).

8.7 The size mix analysis of need shows a strong skew towards small units in Bristol (Table 8.9). This picture particularly reflects the situation in the Inner NW zone, although there is an apparent surplus of 1-bderoom in Outer NE and South and of 2-bedroom supply in Outer NW and Inner East zones. There is still significant need for 3-plus bedroom accommodation across the City.

Tables for Bristol City

Table 8.1 ***Affordability: percent of new households able to buy (adj for wealth)***

	2002	*2004*	*2006*	*2009*	*Average*
Bristol Inner NW	31.2	28.8	31.9	36.0	32.0
Bristol Outer NW	37.5	34.9	38.4	42.7	38.4
Bristol Outer NE	46.4	30.3	32.7	35.5	36.2
Bristol Inner E	38.7	33.1	36.5	40.8	37.3
Bristol Outer E	43.5	34.2	38.0	42.7	39.6
Bristol South	41.7	32.4	35.8	40.0	37.5
Bristol	39.8	32.5	35.9	40.0	37.0

Table 8.2 ***Affordability Measures for 2006 (%)***

	Can Buy Income	*Can Buy wealth-adj*	*Can Buy working*	*Can Buy All<60*	*Shared Own*	*Homebuy 75%*	*Private Rent*
Bristol Inner NW	25.7	31.9	32.0	24.5	7.1	14.8	38.7
Bristol Outer NW	32.3	38.4	41.9	36.9	5.2	15.9	50.3
Bristol Outer NE	27.9	32.7	38.5	34.3	10.8	13.1	35.3
Bristol Inner E	31.0	36.5	40.9	32.4	13.8	13.6	37.7
Bristol Outer E	33.2	38.0	42.4	36.4	18.0	15.7	45.2
Bristol South	31.3	35.8	41.0	35.6	11.3	14.8	40.0
Bristol	30.6	35.9	39.7	33.7	11.2	14.9	41.9

Table 8.3 ***Net Need for Affordable Housing (no per year)***

	2002	*2004*	*2006*	*2009*	*Average*
Bristol Inner NW	630	599	503	410	536
Bristol Outer NW	34	59	20	-23	23
Bristol Outer NE	21	84	67	54	57
Bristol Inner E	-64	-5	-20	-50	-35
Bristol Outer E	311	370	312	261	313
Bristol South	6	120	53	-27	38
Bristol	937	1229	935	626	932

Table 8 4 ***Overall Need Numbers for 2006***

	House-hold Growth	*Gross Hshd Formation*	*Net Relets*	*Net Need*
Bristol Inner NW	356	646	159	503
Bristol Outer NW	65	450	408	20
Bristol Outer NE	145	299	225	67
Bristol Inner E	352	450	533	-20
Bristol Outer E	189	604	311	312
Bristol South	137	884	811	53
Bristol	1244	3333	2448	935

Table 8.5 Components of Need for 2006

	New hhd unafford	*Net migrants unafford*	*Owners -> soc rent*	*Backlog @ 10%*	*Shared Own*	*Homebuy*
Bristol Inner NW	439	75	38	110	53	112
Bristol Outer NW	277	9	44	98	8	24
Bristol Outer NE	201	15	20	56	17	20
Bristol Inner E	286	45	27	156	15	15
Bristol Outer E	374	25	59	164	116	101
Bristol South	567	33	75	188	35	46
Bristol	2145	202	263	772	244	317

Note: Shared own & Homebuy overlap with col 1 and each other

Table 8.6 Relets and Need as Percentage Rates in 2006

	Net Relets % SR stock	*Net Need % hshlds*	*Shared Own % hshlds*
Bristol Inner NW	4.52	1.72	0.18
Bristol Outer NW	6.27	0.08	0.03
Bristol Outer NE	4.99	0.49	0.12
Bristol Inner E	7.58	-0.09	0.07
Bristol Outer E	4.84	0.91	0.34
Bristol South	6.25	0.11	0.07
Bristol	5.71	0.54	0.14

Table 8.7 Threshold House Prices (2-Bed)

	2002	*2004*	*2006*	*2009*	*Average*
Bristol Inner NW	137138	151967	147076	143966	145037
Bristol Outer NW	100509	111749	108152	105865	106569
Bristol Outer NE	63767	95765	92683	90723	85735
Bristol Inner E	82680	99374	96175	94142	93093
Bristol Outer E	83312	104542	101178	99038	97018
Bristol South	78999	100075	96854	94806	92684
Bristol	91927	110923	107353	105083	103821

Note: 2006 & 2009 discount inflation after 2004

Table 8.8 Mean Gross Weekly Household Income (all ages)

	2002	2004	2006	2009
Bristol Inner NW	571	594	605	626
Bristol Outer NW	529	561	581	616
Bristol Outer NE	437	460	473	497
Bristol Inner E	418	439	452	476
Bristol Outer E	490	517	534	563
Bristol South	463	488	505	533
Bristol	490	516	532	559

Note: 2006 & 2009 discount inflation after 2004

Table 8.9 Size Mix of Net Social Rent Need and Intermediate Sector Need in 2006

(Annual number)

	Net Social Rent Need			*Intermediate Sector Need*		
	1 bed	*2 bed*	*3+ bed*	*1 bed*	*2 bed*	*3+ bed*
Bristol Inner NW	300	74	77	28	17	7
Bristol Outer NW	17	-27	29	1	1	0
Bristol Outer NE	-5	50	11	4	3	3
Bristol Inner E	2	-51	29	0	0	0
Bristol Outer E	116	73	32	38	33	20
Bristol South	-31	43	32	4	3	2
Bristol	398	162	210	73	58	34

9. North Somerset

9.1 North Somerset as a whole has rather better affordability than the subregional average, but this mainly reflects the situation in Weston-super-Mare and Clevedon-Yatton (Table 9.1). Ability to buy is quite low in Portishead-Gordano. In the areas where affordability is better, this is particularly so for working households (Table 9.2).

9.2 House prices are relatively high in Portishead-Gordano and in Nailsea-Backwell (Table 9.7). Incomes are highest in Nailsea-Backwell and lowest in Weston (Table 9.8).

9.3 Shared ownership offers a lot more affordability in most of North Somerset, but particularly in Portishead-Gordano and in Clevedon-Yatton (Table 9.2). Private renting is also relatively more affordable in this authority, especially in Nailsea-Backwell and in Portishead-Gordano.

9.4 Net need for affordable housing is spread throughout the authority, but with the largest numbers in Weston (Table 9.3). In all zones except Nailsea-Backwell, needs are projected to be greater in 2009 than in 2002.

9.5 Planned dwelling and household growth is concentrated in Portishead-Gordano and Weston (Table 9.4). However, only in Portishead-Gordano is there a prospect of net need being accommodated within planned growth. Gross household formation is much greater in Weston than in the other areas, although this zone also has more relets. Relet numbers are low in Nailsea-Backwell and in Clevedon-Yatton. Relet rates seem quite high in Portishead-Gordano (Table 9.6).

9.6 New households unable to afford to buy dominate the need picture throughout the authority, although migration-related needs are relatively more important in Portishead-Gordano (Table 9.5). Backlog numbers are not that large but more significant in Weston. Intermediate sector provision could be quite significant in all zones, but numerically greatest in Weston.

9.7 The intensity of need is greatest in Portishead-Gordano and Clevedon-Yatton, relative to existing households, but is significant in all zones (Table 9.6).

9.8 For North Somerset needs for social renting are evenly divided between one, two and three-plus bedrooms (Table 9.9). The need for larger accommodation is particularly marked in Clevedon-Yatton and Nailsea-Backwell.

Tables for North Somerset

Table 9.1: Affordability: percent of new households able to buy (adj for wealth)

	2002	*2004*	*2006*	*2009*	*Average*
Clevedon-Yatton	50.4	38.8	42.6	47.2	44.8
Nailsea-Backwell-L A	43.6	31.9	35.8	40.9	38.1
Portishead-Gordano	36.1	28.9	32.6	37.4	33.7
Weston-super-Mare	50.2	40.9	44.8	49.7	46.4
North Somerset	47.1	37.2	41.1	46.0	42.8

Table 9.2 Affordability Measures for 2006 (%)

	Can Buy Income	*Can Buy wealth-adj*	*Can Buy working*	*Can Buy All<60*	*Shared Own*	*Homebuy 75%*	*Private Rent*
Clevedon-Yatton	35.5	42.6	44.5	39.3	18.6	17.4	56.4
Nailsea-Backwell-L A	28.2	35.8	35.6	32.4	12.7	18.7	63.6
Portishead-Gordano	25.4	32.6	32.5	28.5	19.9	17.8	60.0
Weston-super-Mare	37.9	44.8	47.4	41.1	13.9	16.4	53.4
North Somerset	34.0	41.1	42.6	37.4	15.4	17.2	56.7

Note: Shared own & Homebuy are incremental %

Table 9.3 Net Need for Affordable Housing (no per year)

	2002	*2004*	*2006*	*2009*	*Average*
Clevedon-Yatton	129	179	171	140	155
Nailsea-Backwell-L A	204	254	239	197	224
Portishead-Gordano	166	217	223	221	207
Weston-super-Mare	309	443	433	333	380
North Somerset	808	1094	1067	890	965

Table 9.4 Overall Need Numbers for 2006

	House-hold Growth	*Gross Hshd Formation*	*Net Relets*	*Net Need*
Clevedon-Yatton	65	346	87	171
Nailsea-Backwell-L A	98	349	74	239
Portishead-Gordano	487	274	125	223
Weston-super-Mare	437	820	382	433
North Somerset	1087	1789	669	1067

Table 9.5 Components of Need for 2006

	New hhd unafford	*Net migrants unafford*	*Owners -> soc rent*	*Backlog @ 10%*	*Shared Own*	*Homebuy*
Clevedon-Yatton	198	9	28	24	55	52
Nailsea-Backwell-L A	224	23	30	37	47	70
Portishead-Gordano	185	109	26	28	66	59
Weston-super-Mare	452	123	79	161	109	129
North Somerset	1059	263	163	250	278	309

Note: Shared own & Homebuy overlap with col 1 and each other

Table 9.6 Relets and Need as Percentage Rates in 2006

	Net Relets % SR stock	*Net Need % hshlds*	*Shared Own % hshlds*
Clevedon-Yatton	5.47	1.17	0.38
Nailsea-Backwell-L A	5.60	1.63	0.32
Portishead-Gordano	9.17	1.71	0.50
Weston-super-Mare	6.63	0.98	0.25
North Somerset	6.58	1.23	0.32

Table 9.7 Threshold House Prices (2-Bed)

	2002	2004	2006	2009	Average
Clevedon-Yatton	91462	117357	113580	111178	108394
Nailsea-Backwell-L A	112269	143571	138950	136012	132701
Portishead-Gordano	124442	149089	144291	141239	139765
Weston-super-Mare	82398	103580	100246	98126	96088
North Somerset	95335	119712	115859	113409	111079

Note: 2006 & 2009 discount inflation after 2004

Table 9.8 Mean Gross Weekly Household Income (all ages)

	2002	2004	2006	2009
Clevedon-Yatton	584	618	639	674
Nailsea-Backwell-L A	647	693	724	775
Portishead-Gordano	628	668	694	736
Weston-super-Mare	525	559	580	616
North Somerset	573	610	633	672

Note: 2006 & 2009 discount inflation after 2004

Table 9.9: Size Mix of Net Social Rent Need and Intermediate Sector Need in 2006

(Annual number)

	Net Social Rent Need			*Intermediate Sector Need*		
	1 bed	*2 bed*	*3+ bed*	*1 bed*	*2 bed*	*3+ bed*
Clevedon-Yatton	31	46	38	19	23	13
Nailsea-Backwell-L A	30	96	66	17	22	8
Portishead-Gordano	41	65	51	25	29	12
Weston-super-Mare	151	62	111	40	44	24
North Somerset	253	270	266	102	119	57

Note:

10. South Gloucestershire

10.1 The results from the model have been triangulated with the John Herington Associates Housing Needs Survey carried out in 2003 (final report March 2004). This survey was based on a mix of postal and face-to-face interviews as well as statistical information and provides a more detailed breakdown of information for South Gloucestershire. Local Plan policy has been developed on the basis of the JHA needs survey results.

10.2 Affordability in terms of ability to buy is above the subregional average in South Gloucestershire generally. Within the authority, affordability is greatest in Yate-Sodbury and least in Thornbury and the rural area (Table 10.1). This reflects the high house prices in the latter areas (Table 10.7). Incomes are generally high in South Gloucestershire, and highest in the rural area (Table 10.8).

10.3 There is strong potential for shared ownership throughout the authority (Table 10.2), although in numerical terms the greatest scope is in Kingswood (Table 10.5).

10.4 Private renting is more affordable than buying throughout the district, and this difference is particularly significant in the rural area (Table 10.2).

10.5 There are substantial needs for affordable housing throughout the area, but numerically these are largest in Kingswood and relatively modest in Thornbury (Table 10.3). Needs are tending to increase in North Fringe, because of its greater projected growth (Table 10.4). Half the household/dwelling growth is currently concentrated in North Fringe, and this is one zone where net needs might be able to be accommodated within these growth numbers. There is virtually no growth currently planned in Yate-Sodbury or Thornbury. Kingswood generates the most new households but it also has the largest number of relets (Table 10.4).

10.6 New households unable to buy dominate the need picture in all parts of South Gloucestershire (Table 10.5). Migrants play a modest part in Kingswood and North Fringe. The backlog is relatively moderate, with the greatest number in Kingswood.

10.7 Relet rates are relatively moderate in all parts of the area (Table 10.6). The intensity of need is greatest in the rural area and least in North Fringe.

10.8 South Gloucestershire has the greatest balance of needs for social renting in the larger size categories, particularly two bedrooms, but also three bedrooms.

Tables for South Gloucestershire

Table 10.1: Affordability: percent of new households able to buy (adj for wealth)

	2002	*2004*	*2006*	*2009*	*Average*
Yate-Sodbury	51.7	41.5	45.5	50.3	47.3
Kingswood	41.5	35.4	39.5	44.6	40.2
North Fringe	46.8	38.2	42.1	46.7	43.4
S Gloucs Rural	39.1	34.3	38.4	43.7	38.9
Thornbury	40.3	32.7	36.1	40.2	37.3
South Gloucestershire	43.7	36.6	40.6	45.5	41.6

Table 10.2 Affordability Measures for 2006 (%)

	Can Buy Income	*Can Buy wealth-adj*	*Can Buy working*	*Can Buy All<60*	*Shared Own*	*Homebuy 75%*	*Private Rent*
Yate-Sodbury	40.9	45.5	50.6	45.3	20.5	16.8	54.8
Kingswood	34.5	39.5	43.1	38.2	19.4	17.3	51.0
North Fringe	36.9	42.1	46.1	39.7	20.0	16.7	52.3
S Gloucs Rural	32.8	38.4	40.8	36.5	14.6	18.5	61.1
Thornbury	30.4	36.1	38.7	35.2	13.8	17.6	52.2
South Gloucestershire	35.4	40.6	44.2	39.1	18.5	17.3	53.8

Table 10.3 Net Need for Affordable Housing (no per year)

	2002	*2004*	*2006*	*2009*	*Average*
Yate-Sodbury	139	175	159	127	150
Kingswood	430	497	439	347	428
North Fringe	218	262	225	225	232
S Gloucs Rural	313	328	289	218	287
Thornbury	54	65	58	43	55
South Gloucestershire	1154	1327	1169	960	1152

Table 10.4 Overall Need Numbers for 2006

	House-hold Growth	*Gross Hshd Formation*	*Net Relets*	*Net Need*
Yate-Sodbury	3	325	67	159
Kingswood	462	866	324	439
North Fringe	655	421	178	225
S Gloucs Rural	106	418	107	289
Thornbury	7	124	38	58
South Gloucestershire	1233	2154	714	1169

Table 10.5 Components of Need for 2006

	New hhd unafford	*Net migrants unafford*	*Owners -> soc rent*	*Backlog @ 10%*	*Shared Own*	*Homebuy*
Yate-Sodbury	177	3	27	19	60	49
Kingswood	524	68	78	92	141	126
North Fringe	244	59	49	51	78	65
S Gloucs Rural	257	23	35	81	67	84
Thornbury	79	2	11	5	12	16
South Gloucestershire	1281	155	200	247	357	339

Note: Shared own & Homebuy overlap with col 1 and each other

Table 10.6 Relets and Need as Percentage Rates in 2006

	Net Relets % SR stock	*Net Need % hshlds*	*Shared Own % hshlds*
Yate-Sodbury	5.35	1.17	0.44
Kingswood	5.67	1.09	0.35
North Fringe	5.44	0.87	0.30
S Gloucs Rural	5.01	1.60	0.37
Thornbury	5.44	1.06	0.23
South Gloucestershire	5.44	1.14	0.35

Table 10.7 Threshold House Prices (2-Bed)

	2002	*2004*	*2006*	*2009*	*Average*
Yate-Sodbury	82794	103299	99974	97860	95982
Kingswood	98609	115693	111970	109602	108968
North Fringe	94168	114631	110942	108596	107084
S Gloucs Rural	115408	131908	127662	124963	124985
Thornbury	107052	127506	123402	120793	119688
South Gloucestershire	98885	117330	113554	111153	110231

Note: 2006 & 2009 discount inflation after 2004

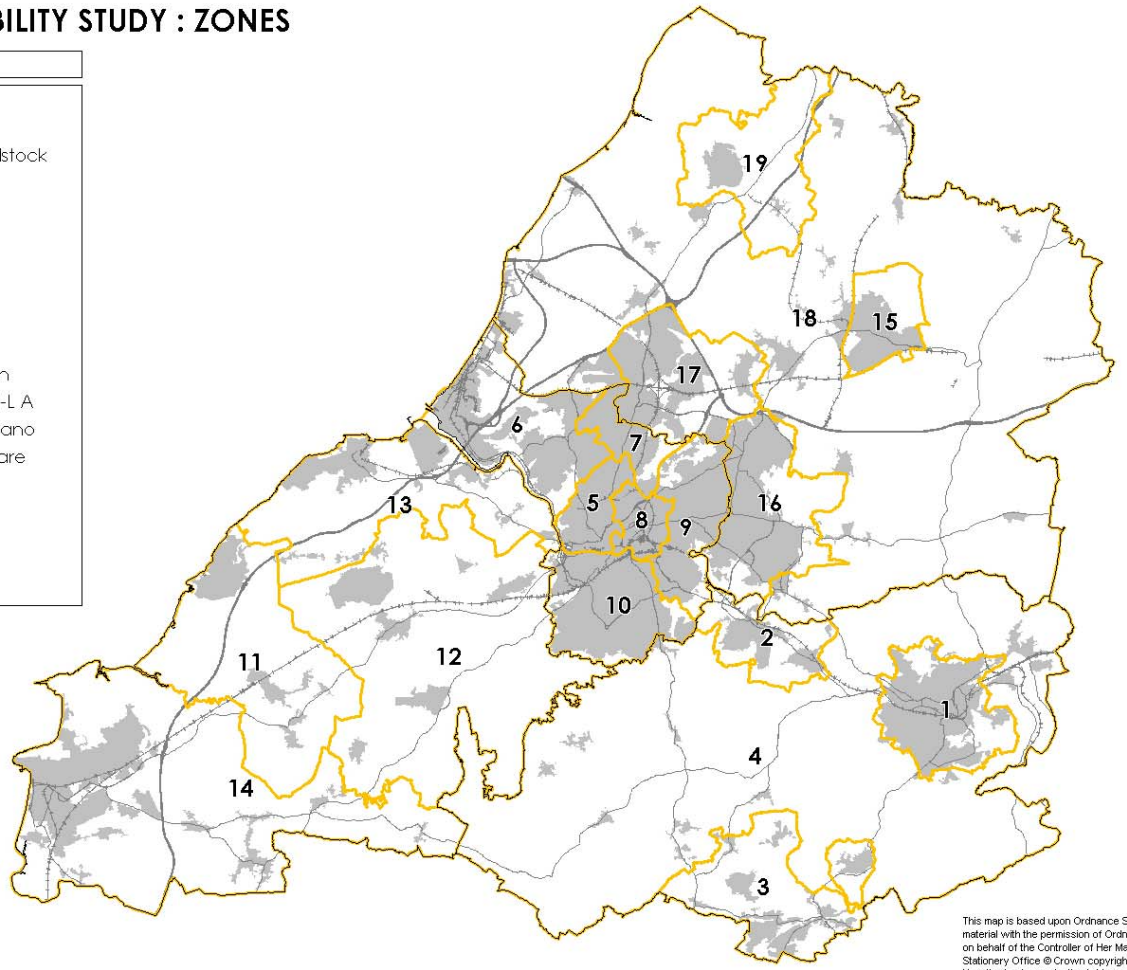
Table 10.8 Mean Gross Weekly Household Income (all ages)

	2002	*2004*	*2006*	*2009*
Yate-Sodbury	570	603	626	665
Kingswood	571	603	627	665
North Fringe	575	600	614	639
S Gloucs Rural	648	690	721	772
Thornbury	604	635	654	687
South Gloucestershire	588	620	643	679

Note: 2006 & 2009 discount inflation after 2004

WEST OF ENGLAND HOUSING NEED AND AFFORDABILITY STUDY : ZONES

Number	Name
1	Bath City
2	Keynsham
3	Mids Norton-Radstock
4	N E Soms Rural
5	Bristol Inner NW
6	Bristol Outer NW
7	Bristol Outer NE
8	Bristol Inner E
9	Bristol Outer E
10	Bristol South
11	Clevedon-Yatton
12	Nailsea-Backwell-L A
13	Portishead-Gordano
14	Weston-super-Mare
15	Yate-Sodbury
16	Kingswood
17	North Fringe
18	S Glouc Rural
19	Thornbury



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Annex A: DETR (2000) Housing Needs Assessment Guidance and this Study

The approach recommended in the DETR (2000) Guidance is summarised in Table 2.1 within that report. This sets out a series of steps to the calculation of net need as an annual flow of units. These steps divide into four main elements:

- Backlog of existing need
- Newly arising need
- Prospective supply of affordable housing units
- Net need

The Guidance points out that several key elements in this calculation may be derived from different data sources, which have their strengths and weaknesses. Studies which involve a household survey tend to make more use of this as a source for several elements in the calculation. However, alternative bases for estimating these elements are identified, utilising administrative, demographic or socio-economic data from secondary sources. This study follows this approach.

Housing Needs Assessment Guidance Table 2.1
figures refer to 2006

	BANES	*Bristol*	*N Soms*	*S Glos*	
1. Backlog total (Housing Register)	3288	14382	4096	3375	excluding transfers, incl
2. Below need threshold	-1101	-6660	-1596	-901	
3. Affordable proportion					assume all unaffordable
4. Non-households					included in r.1 above
5. Total backlog need	2187	7722	2500	2474	
6. Quota reduction rate	10%	10%	10%	10%	
7. Annual need to reduce backlog	219	772	250	247	
8. Gross new household formation	1340	3333	1789	2154	
9. Proportion unable to buy	65%	64%	59%	59%	
Number unable to buy	867	2145	1059	1281	
10. Ex institutional population					not separately estimated
11. Existing households into need	124	263	163	200	Owner occupiers moving
12. In-migrants unable to afford	41	202	263	155	One third of net migrant
13. Newly arising need total	1031	2610	1486	1635	
14 Supply of social relets (net)	565	2448	669	714	Net of transfers, incl RS
15. Change in vacancies, out of mgt					No changes assumed
16. Committed new supply					Not counted here
17. Affordable supply	565	2448	669	714	
18. Overall shortfall	685	935	1067	1169	
rounding difference	0	0	0	0	

Backlog

In this study, the main source of evidence on the size of the backlog of existing households in unsuitable accommodation are the housing registers/waiting lists of the constituent authorities. This is one of the approaches identified in the Guidance.

The Guidance recommends that existing social rented tenants seeking a transfer are treated separately, so we deduct these from the numbers considered. It suggests that many households identified in surveys with housing unsuitability problems would not necessarily seek or require a social tenancy, and that in some cases their problems could be resolved by in situ solutions or moves within their existing tenure. When working with waiting lists, these arguments do not apply to the same extent, because these people have expressed a clear wish to seek social rented housing. Nevertheless, we have discounted from the total numbers on the registers the number identified by the authorities as having levels of need which fall below a reasonable minimum need threshold. This may be regarded as an equivalent adjustment to that suggested above.

The Guidance also suggests that if possible, as in a Survey-based approach, an affordability test should be applied to the Backlog to exclude those who could afford a solution in the market. We are not able to apply this in this instance as we do not have income information on waiting list candidates. However, given that these households are seeking social housing and likely to be waiting some time to get access to it, we would expect most to fall below affordability thresholds for market housing. If they could afford to buy they would be likely to do so rather than wait a long time for a social tenancy.

It is assumed that the housing registers include homeless households currently in forms of accommodation other than conventional private households.

The Guidance recommends setting an annual quota to progressively reduce the Backlog, and points out that this is a policy parameter which is likely to be influenced by the overall supply situation. It recommends that this quota should not be greater than 20%, and that authorities should not aim to completely exhaust the backlog within the planning period. In this instance the quota agreed by the authorities for exemplification in the study is 10% of the (need-adjusted) number on the waiting lists, which would imply an aim of dealing with the backlog over 10 years. This is in line with some studies elsewhere and prudent in view of the tight overall supply situation.

Newly Arising Need

The Guidance identifies gross new household formation as the principal source of newly arising need, and discusses several different methods for estimating this. One of the favoured methods is based upon demographic data on the age structure of the population and patterns of household headship by age within it. This is the method adopted in this study. The Guidance sounds cautionary notes about basing this estimate primarily on survey questions about intentions to move by concealed households, and favours comparing these with figures on actual numbers of new households forming in the past. In this study, the demographic estimates are cross-checked against actual rates of new household formation nationally and regionally as recorded in the Survey of English Housing.

The Guidance proposes that an affordability rate should be applied to new households based on appropriate entry level house prices, normal lending rules, and income estimates for this group. This is what is done in this study, with lower quartile house prices adjusted to relevant size categories compared with modelled incomes. The modelled incomes for younger households are fully consistent with the Government's most reliable national survey of incomes, the Family Resources Survey.

The Guidance makes provision for various possible additions to newly arising need in respect of ex-institutional population and established households falling into need. We do not have specific data in this study on the former group, but this is likely to be small in number. Allowance is made, however, for established households in the major tenure, owner occupation, coming to need affordable/social housing through such circumstances as old age, ill-health, relationship breakdown and loss of income. This allowance is based on the observed rate of such inter-tenure moves from the Survey of English Housing.

The Guidance also provides for an allowance for in-migrants who need affordable housing. This study makes such an allowance, by applying an adjusted affordability rate to the estimated net migration for each zone expressed in household units. The adjustment to the affordability rate is arbitrary, but reflects the general pattern that migrants have higher incomes than non-migrants. This is applied to both in and out-migrants, who are assumed to have a similar affordability profile, the rationale being that out-migrants would reduce the need associated with new household formation while in-migrants increase it. Net migration rates are generally positive in this subregion.

Existing Supply

The main source of supply of affordable housing is the relets of existing social rented housing. Where transfers have been taken out of account on the need side, they should also be excluded from the relets on the supply side, shifting the focus to 'net relets'. The Guidance suggests either basing relets on several years of recent data, averaged, or possibly using a forecasting model which allows for factors expected to change relets in the future. In this model we use actual relets from the most recent year, using detailed data provided by local authorities from their housing management and lettings systems. This is regarded as more reliable than past statistical returns to central government which have not always been completed in a consistent fashion. Allowance is also made for RSL relets based on data in two different returns applied to the updated RSL stock.

The forecasting model used to adjust base year relet rates to projection years is described in Annex B. This uses a relatively sophisticated regression model to predict the effect of changes in economic and housing market variables on relet rates. This model was calibrated on a 'panel' dataset covering all authorities in England over a ten year period.

The stock base to which relet rates are applied is adjusted over the projection period to take account of expected levels of RTB sales and recent rates of net addition to the RSL stock, and in particular instances to allow for demolition. No further adjustment is made for changes in vacancies.

The Guidance offers the possibility of including committed new developments on the supply side so as to focus on the need for additional provision over and above this. In this instance, we do not do this, instead focussing on the overall need for additional provision whether currently planned/committed or not.

Net Need

Net need for additional affordable housing completes the calculation, by taking the sum of the backlog quota and newly arising (unaffordable) need, and subtracting the net relets supply.

Net Stock Changes

The Guidance suggests that it is also useful to look at the projected net changes in the stock of dwellings and households and to check the relevant figures from the above stages against this. This is done within this study insofar as the model contains expected rates of net additions to the stock of dwellings and households, for each zone. These are checked for demographic consistency, by combining the estimates for gross household formation and net migration with an independent estimate of household dissolutions and the net household change resulting. The dwelling/household stock increases are based on land available through the planning system for development in the period up to 2011, and these are broadly consistent with the current household projections for the subregion. However, these projections are subject to review, particularly for the later period.

Net need figures are also compared in the report with dwelling/household growth numbers, and attention is drawn to the relative magnitudes of these numbers. These may have policy implications for both future planned land release and for the feasibility of meeting all of the needs identified, whether through new building or alternative mechanisms.

Annex B Technical Details of Model

B.1 Affordability and Need: Assumptions and Calculations

Affordability

Threshold house prices are based on lower quartile house prices from the Land Registry, adjusted for size. Full house price data was available for 2004 (1st half). The lower quartile refers to all sales, new and secondhand, but excluding sales at less than market value (e.g. RTBs). Summary measures were available for earlier years, on varying geographies, as a basis for calculating equivalent figures for 2002. 'Size adjustment' involves multiplying the lower quartile price for a zone by the square root of the ratio of 3.27 to the average number of bedrooms in owner occupier dwellings in the zone (from Census[5]). One bedroom prices are assumed to be 77.6% of two-bedroom; 3-bedroom 115.3% of two-bedroom. (note that this method is the 'default' approach in the national model, used where sample numbers in the Survey of Mortgage Lending were insufficient to make use of direct lower quartile figures for each size group)

Required income is based on lending multiplier of 3.5 (for single earner, 0.85x3.5 for two earners), subject to test that residual income after tax and housing costs exceeds 120% of Housing Benefit 'Applicable Amount'[6]. Lending multipliers link gross annual income to assumed maximum mortgage loan. A 100% mortgage is assumed for simplicity, to indicate the maximum limit of affordability, and also to reflect the opportunity cost of savings where these are used for a deposit. Separate estimates and adjustments are made for households able to access sizeable amounts of family wealth to fund larger deposits. Evidence in support of the lending multiplier and residual income test assumptions is provided in Bramley & Karley (2005 forthcoming).

For private rental and shared ownership, the affordability test is based on 'affordability ratios', with a limit that outgoings (any mortgage payment plus any rent payment) should not be more than 30% of net income, subject to the same residual income test. Although 30% is above the ratio which some organisations (e.g. NHF) have recommended for social rents, it is below the ratio which was implicit in the HAG system in the early 1990s and ratios which are commonly observed in private renting. For shared ownership, it is similar to the level of outgoings for a marginal buyer under conventional purchase when interest rates are slightly above current levels. For LCHO options, it should be remembered that the purchaser is acquiring an asset as well as paying for its current use, unlike a tenant.

For home ownership options, *outgoings* include a conventional 25-year annuity repayment mortgage at projected mortgage interest rates, plus a small (£230 pa) allowance for repair and maintenance, plus rental in the case of shared ownership. Shared ownership rents depend on RSL policies and financing, grant rates, mix of shares, etc. These are approximately modelled, having regard to data supplied by the

[5] The Census records total rooms by tenure; this is adjusted to a bedrooms basis allowing for reception rooms.

[6] The Applicable Amount is the weekly amount of net income households are assumed to need to live on, assuming their housing costs are covered, as used in the means tests for Income Support and Housing Benefit. These vary with household composition, age and number of children. The model assumes a single representative value for each of the 9 household types.

authorities on typical recent grant and cost levels. The resulting rents are around 3.5% of retained equity; this is a relatively favourable assumption which reflects best practice in the south of England.

Incomes of newly forming households are represented by the modelled incomes of all under-35 households, as argued for and accepted in the IMD 2004 Index of Access to Owner Occupation. The modelling of incomes is described further in B.2 below.

Adjustment for extra households able to afford due to availability of family wealth, based on various evidence from national surveys and local proxy indicators, as described in the next section.

House prices are assumed to peak in 2004 and are subject to a real terms 'correction' (i.e. reduction) of 15% thereafter. This is a judgement based on long observation of the housing market and its tendency to cycles and 'overshooting'. The Barker (2004) report argued that house prices were 24% above long term trend in 2002, and hence implicitly far above trend in 2004. The market in southern England generally weakened in 2004, which is consistent with this view[7]. If the Barker policy recommendations are implemented (as is the Government's intention) then there will be a tendency for the trend level of house prices to fall as well, and if this influences expectations then this would entail a further downward pressure. Finally, current prospects for interest rates are seen as most likely to entail a further rise, particularly if house prices show any signs of increasing again.

Housing Need

The basic model for estimating affordable *housing need* is as follows.

Net Need (units per year)

=

Gross Household Formation x % <35 unable to buy (adj for wealth)

+ proportion (33%) x net migration (household equiv) x % <35 unable to buy

+ proportion (0.234%) x owner occupier households (moving to social renting)

+ proportion (10%) x waiting list 'backlog' above need threshold

- net relets of social rented housing

Note that this is a measure of the annual (flow) of units needed of additional affordable housing provision (including intermediate sector as well as social renting), but that it does not purport to cover all needs associated with poor house condition or unsuitability (some of these needs may be reflected in the backlog, however). It should also be noted that not all of this need has to be met through new build provision; for example, mechanisms like Homebuy or private rental leasing provide ways of accessing existing housing on a more affordable basis.

[7] The most recent price data indicates some fall in the region in early 2005, consistent with our assumption.

Gross household formation is defined as the number of separate households which form over a period of a year, which did not exist at the beginning of that year. This number is calculated as follows: (i) 'household representative rates' (HRRs) are calculated for the 16-29 and 30-44 age groups at 2001 Census, in each zone; (ii) the 'slope' of the increase in household headship (HRR rates) per year is calculated, for the segments 16-29 and 30-44; (iii) these slopes are multiplied by the populations aged 16-29 and 30-44 in the target year; (iv) an additional element of 0.1% of total household per year is added. This method is as described in DETR (2001) Guidance, Appendix 7. The base population aged 16-29 is adjusted to remove two-thirds of students, who are treated as a 'static' population not contributing to new household formation. This has a major impact in a couple of zones. The numbers generated by these formulae are checked against rates estimated for England, regions and subregions from the Survey of English Housing, based on the number of households where the respondent had moved within the last year from living with parents/relatives/other etc. They are also checked for consistency with the estimates for net dwelling/household growth, household dissolutions (based on Bramley 1996), and net migration.

Net migration is derived from the projected dwelling/household/population growth numbers in the model, with a constant factor designed to control the subregional total to an overall migration estimate contained in local demographic forecasts. The ratio of migrant population to migrant households is assumed to be 2.33, which is roughly current average household size in the subregion. It is assumed that migrants are generally better-off financially than non-migrants, which is why the affordability factor is scaled down. However, the choice of 0.33 for this scaling factor is an arbitrary convention (as used in a number of previous studies). The model assumes that the affordability profile of in-migrants and out-migrants is similar. It has not been possible in the timescale of this project to explore further detailed local evidence from the Census or elsewhere on the profiles of migrants.

Social landlords typically rehouse a number of former *Owner occupiers* each year. Their needs may have arisen from a variety of circumstances including old age, ill-health or infirmity, change of economic circumstances leading to financial difficulty, etc. The factor of 0.234% is the national average annual percentage of owner occupiers who move into social rented housing, based on the Survey of English housing. The SEH indicates that in the relevant subregions around WoE, the rate is similar to this or a little higher. Practitioners from the WOE authorities confirm that they do rehouse owner occupiers in some numbers, particularly in sheltered housing. Since our relets data includes this kind of housing stock, it is necessary to include this allowance in the overall needs calculation.

The backlog of actual or potential households with existing needs is in this study represented by the *housing waiting lists* of the local authorities. The numbers counted exclude transfer requests from existing tenants and exclude those households whose needs fall below a minimum threshold level. The latter adjustment had to be implemented slightly differently in each authority[8]. Broadly speaking the main LA waiting lists are taken to be representative of the whole picture including RSL lists;

[8] North Somerset uses a time-based allocation system and found this adjustment difficult. Because data was supplied too late for inclusion in the analysis underlying this report, a proportional adjustment was made to the figures based on the experience in the other authorities.

Bristol operates a common register, BANES is an LSVT, and the other authorities advised that the equivalent situation applied in their areas.

The proportion of this backlog taken into the annual need calculation was set at 10% on the basis of agreement with the authorities and consistency with a range of other studies. The DETR (2000) Guidance states that this is a policy parameter whose value will in practice be affected by relative the shortage situation, but that authorities should not plan to exhaust their backlog within their planning period – hence the maximum recommended quota there of 20%.

Net relets provide the main measure of existing supply of affordable accommodation from the social rented sector. Net relets are the number of lettings of existing accommodation (i.e. excluding new build or new conversions) excluding lettings to tenants transferring within the landlord's stock or from elsewhere in the social rented sector. In other words, this should be the same as the number of lettings to new tenants generated from the existing stock. Detailed data by size and zone were provided by the local authorities for their stock (including the BANES LSVT stock). Other RSL numbers were estimated from two sources, HSSA returns and Housing Corporation Regulatory returns, expressed as a percentage of stock, and then applied to the HA stock in each zone (based on Census, adjusted for undercount, and updated to 2004 using programme data). These estimates relate to 2004.

Relet rates for other projection years (2002, 2006, 2009) are calculated as deviations from the 2004 rate using a predictive model based on regression analysis of relet rates for a 'panel' dataset of English local authorities over a 10 year period. This takes account of the predicted impact on relet rates of differences in economic and market conditions, including real incomes, unemployment rates, economic activity rates, interest rates, vacancy rates, real house price levels and growth rates. These predictions will vary in sensitivity tests where any of these factors vary. The predicted relet rates are applied to the social rented housing stock projected for the relevant year and zone. These stock projections take account of expected Right to Buy and actual rates of net dwelling gains in the 2001-04 period.

B.2 Structure and Indices used in Local Incomes Model

This description applies the current (February 2005) version of the model applied to English districts. There are some minor detailed differences which arise when this is implemented for sub-areas in West of England.

Households are divided into nine types based on Census household composition data, as follows:

H1 – single non-elderly; h2 – one adult + dependent children; h3 – two adults; h4 –two adults + 1 child; h5 – 2 adults + 2 children; h6 – 2 adults + 3 or more children; h7 – 3+ adults; h8 – single elderly; h9 – 2 adults elderly.

Household type composition is projected forward to target years using changes embodied in Government household projections (national).

Within each group the proportions with no worker and with 2+ workers are based on the national proportions for that household type multiplied by indices predicting the local relative propensity to have no or 2+ workers. These indices are calibrated using regression analysis on Census data, producing the following formulae.

I0w = 2.185 -0.00104*lpecact-0.0162*ecact+0.0254*unem-0.00985*piahome

I2w = 0.464 +0.00926*ecact-0.0132*unem-0.0177*piahome

Where lpecact=lone parent economic activity rate; ecact=overall economic activity rate; unem = unemployment rate; piahome = inactive keeping house rate
All rates are percentages; adjusted forward to target year using Labour Force Survey data and Treasury employment projections.

The proportion of each household type with one worker is derived by subtraction from 1.0.

Gross weekly income distributions for each sub-group (household type x number of workers) are assumed to be lognormal, with the key parameters initially based on those observed for these subgroups in the national Family Resources Survey (pooled repriced data for 1999-2002). Incomes are based on 'first benefit unit' (i.e. core unit of householder and partner) for complex households. The key parameters for lognormal distributions are the median and the standard deviation of ln(income). These parameters are derived separately for all households and for under-35 households.

The local values of the median incomes are predicted using composite indices applied to the national values for each subgroup. Two composites are used, one for working households and one for non-working households. The individual components of these indices are scaled to vary proportionately to the impact of the relevant factor on average incomes, and centred on 1.0. These components are then combined using a combination of additive and multiplicative terms. The weights on these terms are determined by trial and error in order to replicate the observed range of variation in actual mean and median incomes between (a) standard regions and (b) groupings of high and low income districts.

The composite indicators used in the model reported in this study are as follows, for non-working and working households respectively

M0 = ID*0.93*(0.5+0.25*M1+0.1*M2+0.1*M4+0.1/ID)

MW = ID*0.97*(0.2 + 0.3*M1 +0.25*M2+0.15*M6 +0.1*IPT)

Where

ID = ratio of target year to base year average real income

M1 = 0.1*(IPT+2*IOCC +2*IEARN +1/LWEARN + IIND + ICAR2 +IW + 1/ID)

M2 = IOCC*IEARN*IIND

M4 = IW/ID

M6 = M2*M4

IPT = Index of relative part-time working

IOCC = Index of relative income based on shares of high and low class ocupations weighted by relative household incomes for these groups

= (1 + (0.79*highclass –0.42*lowclass)/100)/1.038

IIND = Index of industrial structure weighted by relative earnings in main industry groups
= (0.769*agric+1.22*mining +0.998*manuf +1.22*egws +0.796*distrb +0.948*constr +0.75*hotcat+1.037*transp +1.075*finser+1.075*busser +1.0*educ+0.95*health+0.97*othind)/(allemp*0.9).

IEARN = Index of relative median earnings (all full-time workers by place of residence) = medearn/17680.

ILWEARN = Index of relative incidence of low earnings (lower quartile)
= 12722/lqearn

ICAR2 = Index of relative income based on car ownership adjusted for density

= 0.8*(1.61*pcars2 +0.898*(DACAR –pcars2) +0.42*(100-DACAR))/79.9

where DACAR= 100- pnocar +0.209*dens –2.06*spars.

IW = Index of relative wealth based on proxies of class, homeownership, house prices and car ownership

= 0.958*(0.33*(100+0.78*highclas-0.42*loclass)/100 +0.33*IHP*(100+0.34*pown-0.32*(100-pown))/100 + 0.33)

where IHP = Index of relative house prices = (Mean house price 2001)/119494.

ID = Index or relative deprivation based on lone parents, long term and all unemployment and car ownership

= (0.83*(100/(0.5*(0.36*(hh2+pltun) +0.42*(unem-pltun) +1.09*(100-unem-hh2))+50*(0.92*(1.255*DACAR+0.42*(100-DACAR))/97.6))^2.5)/0.827

Wealth Adjustment to Affordability

In the affordability model, a factor was applied to adjust affordability based on income to take account of potential access to family wealth. This is based on (a) evidence from the Survey of English Housing on the proportion of first time buyers funding deposits primarily from 'gifts, inheritance, informal loans, etc' (ftbgift), calculated at subregional level; and (b) an indicator based on evidence from the Family Resources Survey and the Scottish Household Survey of the proportion of mature families (couple families or large adult households over 40) with enough savings to finance a 20% deposit (prmf20p). The second indicator is predicted using

proxies calibrated on the above survey data. This indicator is scaled to reflect the finding, from an analysis of Survey of Mortgage Lending data, that approximately 14% of first time buyers made a deposit of more than 20% and would not have been able to buy without this (on the basis of local threshold prices and their reported incomes).

The composite of these two indicators is applied to he incremental margin able to afford Homebuy (25%), plus a quarter of the remaining unaffordable households. The rationale is that it is assumed that access to wealth is most relevant where households are close to the margin of purchase, but helps a small proportion of households with markedly lower incomes.

pbwadj=pctb+0.5*(prmf20p+ftbgift)*(iphb+0.25*(100-pcthb))/100.

Where pctb = % able to buy based on income
Iphb = incremental percent able to afford Homebuy
Pcthb = percent able to afford Homebuy or full purchase

The proxy formula for prmf20p is

prmf20p=39.35+0.046*mnyall-0.274*tp2bed/1000-49.58*phwkg01/100-3.34*psocr01/100+0.648*hiclas01.
Subject to 5<=prmf20p<=35 .

Where mnyall = modelled mean income by district
tp2bed = threshold price 2 bed house; phwkg = % working households
psocr = % social renting; hiclas = % high occupational class.