Annex 1

Review of methodologies for establishing an approach to affordable housing in the East Midlands

Background and purpose of research

1. This research has been commissioned to develop an approach to establishing the required level of affordable housing taking into account the requirements of PPG3, draft PPS3 and the objectives and policy constraints of the Regional Plan. The method chosen should enable us to formulate an affordable housing target for both the region and each sub-regional housing market in the East Midlands, consistent with the overall regional target for housing provision. It will include recommendations for achieving an appropriate mix of household types and meeting the need for affordable rural housing.

2. The targets produced will be provisional in the Regional Plan, pending the completion of Housing Market Assessments across the region.

3. The East Midlands has agreed 'benchmark' housing provision figures for HMAs for the period 2006 to 2026. Work is ongoing to calculate district figures within each HMA. This review is considering methods that have been used for establishing the numbers of new dwellings that should be affordable. Affordable housing is defined by Guidance from the ODPM as being 'affordable' in the local context to households who would not be able to meet their housing needs in the open market. It covers a spectrum of tenures including social rented housing, 'low cost home ownership' and 'sub-market rental'.

Affordable housing need calculation methods

4. The methods reviewed in this appendix are:

1. **Holmans method** (net stock flow RPG8), as is used in Holmans et al. 2004 and Holmans et al. 2005.

2. **CURS method**, as is used in University of Birmingham Centre for Urban and Regional Studies (March 2003) and (March 2004)

3. **Bramley method**, as used in Bramley and Karley (2005) and Bramley (2004)

4. **South Nottinghamshire Affordable Housing Study** (2003-5)

5. **ODPM Housing Market Assessment Draft Guidance** *(*December *2005)*

5. These were examined to decide which would be preferable for establishing the required level of affordable housing in each of the sub-regional housing market areas in the East Midlands, and in the region as a whole. The following criteria were therefore used in assessing each methodology:

The data required must be robust at sub-regional level
The amount of both intermediate and social rented housing must be calculated

The data required must be accessible within the budget and timescale of this project, ruling out primary data collection

The method must be feasible to perform with necessary checking within the timescale of this project

The affordable housing requirement must be reasonably robust over a twenty year timescale

Overview of differences between the methods

6. The five methods under evaluation are each described in detail below. All of these are variants of one or other of two basic approaches to assessing the level of affordable housing required. These two approaches are a "gross flows" approach and a "net stock" approach.

7. The "gross flows" approach was developed by Glen Bramley in the DETR Guidance, (2000) building on earlier work, and the approach has been continually refined since then; four of the methods considered here are variants on it. These are Bramley's own subsequent development, the CURS study method, and the updated ODPM Draft Guidance. The South Nottinghamshire study's method too is broadly similar, although it differs in the way in which it looks at the situation at fixed points in time rather than flows over time.

8. All these approaches estimate the annual need for affordable housing, and then look at whether this need can be met from the annual supply of relets. If these two balance there can be said to be an adequate supply of affordable housing. If not, then the level of the shortfall indicates the additional requirement for affordable housing - or the extent of the surplus, if there are more relets that households needing affordable housing each year. These studies differ in levels of sophistication and there are concerns regarding some of the detail of the methodologies. The approach recommended in the ODPM draft guidance[1] is probably the best example of those reviewed here in terms of methodology, but relies upon data sources that are not feasible for this study. The CURS study and the Bramley methodology both offer good worked examples of a gross flow methodology for assessing the level of need for affordable housing, using available data sources (although the omission of the backlog in the CURS study is of some concern).

10. Alan Holmans' method is fundamentally different to the others in that it takes a "net stock" approach. Rather than considering flows in and out of social housing, this approach looks at the projected growth in the household numbers, and the current propensity of different household types to be living in social housing. The proportion of the growth in the household population that should be accommodated in the form of social housing can then be established.

Strengths and weaknesses of different approaches

11. Advantages of "net stock" method relative to "gross flows" methods

1. The gross flows methods vary in quality and level of sophistication. The better of them require a variety of data sources, income modelling and assumptions which need to be tested carefully to produce convincing results. A detailed understanding of the housing market areas is also needed. This is something that the housing market areas will be carrying out in the future, and they may want to consider such methods.

[1] The fifth of the approaches reviewed here – see ODPM, 2005, *Local Housing Assessments draft for consultation*, ODPM, London

However, for the purposes of this project it is not possible to complete this level of detailed analysis. A less sophisticated version of a gross flows model which has not been tested for sensitivity to its individual parameters would, we think, produce results which are questionable. The net stock approach uses good quality data which is robust at regional level, and can be disaggregated down to sub-regional level. It will produce an estimate of affordable housing requirements for use until the more detailed HMA assessments have been carried out.

2. The requirements estimated by 'gross flows' models are very dependent on household incomes, in that these determine the affordability of market-rate housing. However, there is no primary data source of income distributions at sub-regional level. It is therefore necessary to model incomes with some sophistication, or to purchase modelled data.

3. There are difficulties in establishing the in-flow into social housing from existing households. It is known that over 60% of entrants into social housing are existing households rather than newly-forming households (table A1 in annex 1), yet estimates have to be made from national averages and overall trends used to estimate these numbers. These figures can produce unlikely results that often fail to mirror what is known to happen in reality. The ODPM draft guidance assumes either a detailed household survey or access to very good quality local authority data on housing allocations. These are impractical for the purposes of this project.

4. There are concerns too regarding relet figures. Although these are available from HSSA, they do not distinguish between relets to new households and new tenancies issued to existing tenants, such as when a joint tenancy is converted to a sole one.

5. The gross flow methods look at income in order to establish which households require affordable housing. This assumes a constant link between incomes and house prices, which is questionable over a twenty year period. The Holmans approach instead assumes that the current pattern of which household type live in social housing will remain unchanged in the future. This too may change, but is less likely to be subject to severe fluctuations.

6. There are difficulties in establishing the entry-level cost of open market housing. All the methods reviewed here did this differently, and some quite questionably. Relatively small differences in the assumed income that households require to access market housing can make large differences to the projected requirement for affordable housing.

12. **For these reasons, we recommend the Holmans 'net stock' approach to provide interim estimates of affordable housing targets at regional and HMA levels for the East Midlands.** Given the caveats associated with this approach (see below), it should be noted that:

the figures are interim
there are problems of data availability
there is an extremely short timescale for the work
the approach is comparable to those taken in other regions
there are also caveats concerning a gross flows approach

Disadvantages of "net stock" method relative to "gross flows" methods

13. Although we recommend the use of Holmans' "net stock" approach for the purpose of these interim estimates, we note a number of caveats about it:

1. It uses the current provision of social housing as a proxy for future need – i.e. it assumes that the current pattern of social tenure is the most appropriate one. It is not able to detect mismatches between social housing need and social housing provision of particular dwelling types and in particular locations. Therefore it does not include a way of estimating the additional supply needed to correct these mismatches.

2. The core method is not able to estimate intermediate housing requirements; these requirements must be calculated by means of an extension which substantially complicate the approach. This extension "gross flows" methods, depends on household income data, with the same ensuing problems.

3. The method is not able to simulate different scenarios of, for example, future house price growth, interest rates or real earnings growth in order to estimate how those might affect the need for affordable housing.

4. The nature of some of the data sources used means that is not possible to produce district-level, HMA or sub-regional estimates directly: these must be produced by apportionment.

5. The method as used previously does not take into account the potential of vacant stock to meeting future affordable housing need. There are some districts in the East Midlands 5-6% of their social housing stock empty. The government considers that it is good practice to have no more than 1.5% stock empty, and many districts in the East Midlands do achieve this figure or lower. It would however be possible to modify the method so as to assume that empty properties in excess of this level will be available to be brought back into use to meet the needs of future households and will reduce the number of additional affordable dwellings required.

14. The five approaches are now described in detail.

1) Holmans method

15. This is what is termed a "net stock" approach. The assumption made is that the need for additional affordable housing arises from the growth in population. The changing population structure (in terms of age and household type) is then used, together with the current propensity of each household type and age to reside in social rented housing to determine the proportion of social housing that is required.

16. Actual numbers of households in the base year and projected numbers of households in future years are apportioned between "market" and "social sectors". Introducing need for "intermediate" housing is a recent development, not yet fully integrated with division previously used between market and social sectors.

17. Apportionment of future totals of households between the market and social sectors depends on the fact that housing tenure varies systematically with type of household – married couple households are the most likely to be owner-occupiers and lone parent

households with female heads the least; and with age – the oldest and youngest are the least likely to be owner-occupiers. For each household category defined by type and age, percentages that in the base period were in the market sector are calculated the Survey of English Housing (SEH). These percentages are then applied to projected numbers of households in each age/household type category in future years. For younger households (heads aged 44 and younger) this is the procedure. At ages 45-49 and above, allowance is made for a "cohort effect", that as households age they generally keep to the same tenure. The market sector proportion of households aged 55-59 in 2001, for example, will be approximately the proportion among households aged 65-69 in 2011 and 75-79 in 2021. The base year proportions of households in each tenure are "rolled forward" in this way to future years. Account is taken of moves into care by those in the upper age groups. The result is to increase the proportions of households in the market sector at the higher ages in 2011 and 2021 relative to the base year. The projected tenure proportions are then applied to numbers of households analysed by type and age. From the projected numbers of households in the market and social sectors in 2011 and 2021 (for example) compared with the numbers in the base year, the net increase in the total of households in each tenure can be calculated.

Example calculation: new housing provision required to meet newly arising demand and need in England in 2001-2021: Estimates made for Shelter in 2005

(thousands)			
	Market sector	Social sector	Total
Net increase in households[2]	3,039	490	3,529
Vacant dwellings[3]	89	19	106
Offset to loss of re-lets due to past RTB sales	-369	+369	0
Replacement of losses from the housing stock	230	100	420
Offset to reductions in private sector lettings to tenants with Housing Benefit	-100	+100	0
Twenty year total	2,979	1,076	4,055
(annual equivalent)	(149)	(54)	(203)

How does the method calculate:

a. Which households can't afford market housing (to buy? or to rent?)

This method differs from others discussed in this annex in that it does not attempt to estimate directly which future households can afford market housing. Instead it uses what is called a "fixed coefficient" system, which assumes that the proportion of different household types and ages in social housing will remain constant.

b. Which households will choose affordable housing?

The division between tenures comes from survey evidence about what households actually do, not what hypothetically they can afford to do. It is thus considering what households have actually done in the past, taking into account actual needs and preferences.

c. Contribution of relets from the existing stock to meeting future needs

[2] 2002-based household projection modified
[3] Assumes no change in vacancy ratios

It is assumed that relets from within the existing stock are needed to meet the needs of the existing size of household population. They are not therefore available to meet the needs of a rise in household numbers.

d. Possible changes to the size of the social sector stock

Allowances are also needed for dwellings to replace losses from the social sector stock, and for replacing re-lets lost as a long term consequence of RTB sales. When an RTB owner-occupier household dissolves, the dwelling is sold on the open market. If the household had remained a tenant, the dwelling would have become available for re-letting.

e. Existing empty stock

It is assumed that the proportion of empty stock will remain constant. No allowance is made for high levels of empty stock to meet the needs of future households. However, for the purposes of this study, alternative assumptions can be made, such as a reduction in vacancies in the social sector stock to 1.5% (the government target).

f. Backlog of housing need

This is added on as an additional component of need. It is calculated by adding together:

Households in local authority temporary accommodation (from HSSA data)
Concealed families wanting separate accommodation (from census data)
Households in shared dwellings wanting separate housing (from Survey of English housing data)
Would-be couples living apart
Single homeless people, hostels, etc

There is then a small reduction made for those saving to buy. Some of this backlog are current social tenants who will release an affordable dwelling when they move, so these can be removed from the total requirement for additional affordable housing. The requirement for new affordable housing assumes a policy commitment to reduce the backlog by 50% over a 5 or 10 year period.

g. Number of newly forming households unable to afford market housing

See a). It is assumed that the numbers entering social housing in the past represents the numbers who form and are unable to afford market housing.

h. Newly arising need from existing households

There is no need to distinguish these separately in this method. They are included in the same manner as newly forming households.

i. Need for intermediate housing

The intermediate market cannot be assessed in the same manner as it is currently such a small tenure. Instead, the 2005 Shelter study (Holmans et al 2005) instead develops a method based on that used in the *Greater London Housing Requirements Study* (Greater London Authority, December 2004). This defines the need for intermediate housing in terms of an income range, the lower boundary being defined by ability to afford more than a housing association rent, and the upper boundary by the ability to afford a lower quartile house price. It is assumed that 30% of net income is available to meet housing costs.

The upper boundary of the income range for intermediate housing is the income that is just sufficient to service a 100 percent mortgage on the lower quartile house price with 30 percent of net income used for house purchase. The lower boundary is the income at which the average housing association rent (plus an addition to reflect the fact that intermediate housing is more lightly subsidised than RSL housing). Not all new households within this range would want intermediate housing proportions are assumed. Proportions are assumed on the evidence of the previous tenure of households taking up shared ownership and Homebuy.

The number of new households is estimated at regional level from the Survey of English Housing, and apportioned sub-regionally by reference to DCLG's published District-level household projections.

In some parts of the East Midlands the upper and lower boundaries of the income range for intermediate housing will be close together. The calculation has to be done initially at district-level, and districts grouped as appropriate.

j. What proportion of affordable housing meets the need for mixed communities

This is not addressed

k. What proportion of affordable housing is financially viable

This is discussed in respect to the potential of S106 to deliver some of the housing, and the resultant financial costs of supplying the rest.

Data requirements

Official household projections. These are produced regionally by government. The East Midlands has produced sub-regional estimates for total population growth, but not by household type and age. It would therefore be necessary to made assumptions from regional data to sub-regional level. In general the smaller the population of an area, the greater is uncertainty about household projections, owing to the possibility of divergence from national trends.

Survey of English Housing which has an annual sample size of about 20,000. At regional level it is necessary to aggregate 3 years' data; but even with that, the sample is small for the smaller regions. It cannot be used directly at sub-regional level. In practice, for sub-regional areas the change in the proportion of households in the market and social sectors is estimated from regional data and added to the different base level proportions, which can be derived from census information.

HSSA data on households in temporary accommodation

Census data on concealed households

Survey of English Housing data on house sharers

Income distributions, from the Survey of English Housing, at regional level.

Average housing association rents

Lower quartile property price, by housing market areas

Comments on the methodology

The method does not directly consider affordability or need for affordable housing. Rather it looks at which groups have in the past entered social housing. This has the advantage of being based upon real actions, rather than hypothetical assumptions regarding affordability, but cannot take into account the current or future affordability of market housing.

The proportions of market and social sector households are assumed to be unrelated to the future course of incomes, employment, and interest rates. There is no systematic way to make adjustments upwards or downwards to reflect different views about future house price growth.

Household projections depend on time-trends in household representative rates (i.e. the proportion of members of population groups defined by sex, age, legal marital status and cohabitation status that "represent" a household, similar in substance to household headship rates). The method assumes either that the ratio of incomes and house prices in the projection period will be similar to that in the base period, or that it is minimally related to household formation rates.

The method does assume that there is no surplus of existing affordable housing, either empty or being let out to those who do not really need it (for instance because the property would otherwise remain empty).

The intermediate market cannot be assessed by the same methodology because the tenure is currently very small. It is necessary to calculate the size of this market by a variation of the gross flows method.

Conclusion

18. This is the method that is recommended for this study. The fundamental reason is that while it is less robust than a full gross flows model, the data are simply not available for a gross flows approach. Were a sufficiently robust household survey to be undertaken covering the region as a whole, then the full gross flows approach could be used.

2) CURS Method

19. This method calculates the proportion of newly forming households likely to be able to buy market housing. It does this at district level.

20. The stages of the calculation of need for affordable housing in the CURS method (taken from Table 5.2 of *Additional Work on Background Information on the East Midlands Housing Market* (March 2004):

(i) From a distribution of incomes of new households and the average price of houses excluding detached houses and a threshold price-to-income multiplier (3.5) derive the proportion of new households that would be unable to afford to enter owner-occupation. The proportions for the Districts of the East Midlands range from 44.77 percent (Bolsover) to 73.26 percent (Derbyshire Dales).

(ii) Estimate (from household projections) the number of new households that will be formed in the next five years.

(iii) Multiply the number of new households below the owner-occupation threshold (stage (i) to give gross need for affordable housing in the next five years by new households

(iv) Calculate the need for affordable housing by private sector tenant households, assumed to equal 5 percent a year of total households in the private rented sector.

(v) Add the numbers at (iii) and (iv) to give the gross total of newly arising need

(vi) Subtract the number of dwellings available for re-letting to incoming tenants (annual average x 5)

(vii) Subtract (vi) from (v) to give the net need, in the next 5 years to be met by adding to the affordable housing stock

21. The output of this methodology are a series of maps and tables showing in which locations it is most difficult to afford housing alongside an estimate of the requirement for additional affordable housing in each district. This is then considered at sub-regional, county or housing market area.

How does the method calculate:

a. Which households can't afford market housing (to buy? or to rent?)

Survey of English Housing data is used to obtain an income distribution of household income of newly forming households nationally and used as estimate of incomes in the E Mids. CACI data is also used, which shows regional variation better.

Average price of non-detached dwellings is used to determine what they would have to afford. They considered using terrace house prices, which are lower, but rejected this on the grounds that it makes the index dependent on one property type and vulnerable to abnormal results, and excludes many properties that first time buyers do commonly access.

Property purchase of 3.5 times income is considered affordable.

b. Which households will choose affordable housing?

None

c. Contribution of relets from the existing stock to meeting future needs

The model uses the estimated number of re-lets, reduced by a factor ("derived from CORE", but not explained exactly how) so as to include only estimated lettings to new or temporary households.

d. Possible changes to the size of the social sector stock

None, but acknowledges this is a issue.

e. Existing empty stock

None

f. Backlog of housing need

None

g. Number of newly forming households unable to afford market housing

The model calculates the proportion of newly forming households unable to afford. It then uses government household projections together with actual (gross) household formation rates over the 1991-2001 period using census data to derive a gross household formation rate for the future.

h. Newly arising need from existing households

5% of private renting households move into social housing each year nationally. This figure is applied to the East Midlands to give an annual estimate of need arising from within the private rented sector. The methodology states that this "is a gross inflow, not a net flow but the reverse outflow is accounted for in the supply of relets" I don't understand why this element should be added on, seeing as the relets have already been reduced so as to include only lettings to new or temporary households.

i. Need for intermediate housing

This is not mentioned

j. What proportion of affordable housing meets the need for mixed communities

None. It does not turn the numbers required into a proportion of overall supply of new housing, so this does not arise.

k. What proportion of affordable housing is financially viable

None. It does not turn the numbers required into a proportion of overall supply of new housing, so this does not arise.

Data requirements

Land Registry data giving average property price, by property type.
CORE data on relets
CORE data on previous tenure of new social housing tenants.
Government household projections
Census data giving gross household formation rates over 1991-2001
Either CACI or SEH data on income distributions. CACI gives regional variations better, whilst SEH can actually identify the incomes of newly-forming households, but this has to be national data assumed to be the same across the East Midlands.

Comments on the methodology

Income distributions of new households below regional level depend heavily on assumptions. Even at regional levels the samples in the Survey of English Housing are small.

There is no allowance made for the backlog of current housing need

Households are deemed to be in need of affordable housing if they cannot afford the average price of non-detached dwellings in their district. This is quite high to take as a threshold price of home ownership. Lower quartile or lower decile prices would be preferable, but Land Registry data does not give these for small areas.

Household projections give net increases in numbers of households. Deriving gross new households is a somewhat uncertain procedure. The method does not state explicitly how this has been done.

Assuming that 5 percent a year of private rented sector households would move to the social rented sector (if they could) everywhere is a sweeping assumption. There are some odd-looking figures of some for the districts. More recent figures (see Table A.1 of Annex 5) suggest 3.5 to 4 percent would be more accurate.

It is not clear how the number of relets to new households has been calculated, whether account is taken of new tenancies issued to existing tenants (eg following converting a joint tenancy to a sole one or vice versa), or whether allowance has been made for tenants moving between RSL to council-owned housing. Notes about moves and new lettings are an Annex to this note (Table A.4).

There is a possibility of double-counting between new households and moves from the private rented sector. Many new households go into private renting as an intermediate step towards getting a council house. The CURS method will bring them into need for affordable housing straight away. New households who move to LA or HA housing after a spell as private sector tenants are included in the 5 percent.

The CURS method (unlike Bramley) ignores moves from owner-occupation to LA and HA housing altogether. Their number is far from negligible as nationally, 18% of new entrants to social housing come from home ownership. (Table A.1 of the Annex 5).To include moves from owner by a constant percentage would be straight forward. To be sure of the accuracy of the figures for re-lets would be difficult.

No calculation is made of the need for intermediate housing, although this could be established by using the income distribution and establishing a threshold income needed to sustain intermediate housing.

The method assumes that income to house price ratios will remain constant over the time period in question, five years in this instance, but a greater concern over a twenty-year period.

Conclusion

22. For these reasons (i.e. the large number of caveats) this approach is not seen as robust even at regional level as the Holmans net stock approach. The Holmans approach reduces the need to use incomes and prices data except for the intermediate market, and only then because the intermediate market is so small relative to the other sectors.

3) Bramley method

23. This method is described in Bramley & Karley (2005) as a "partial 'gross flows' model". It calculates the proportion of newly forming households who are unable to afford market housing, adds on an estimate of the numbers of owner-occupiers who will move into social housing each year and subtracts from this the number of social housing relets to give a net figure for the annual shortfall (or surplus) of provision. It then adds on the backlog of housing need, assuming that policy aims to get rid of the backlog over a ten year timespan. The need for intermediate housing is integrated into this model.

24. Adapted from Bramley (2004), the model is:

N = (A x (H + 0.33 x M)) + (S x O) + (Q x W) – R

N is net need for additional affordable housing (units p.a.)
H is gross new household formation (households p.a.)
M is net inward migration (households p.a.)
A is the proportion of new/young households able to buy in the market *(should be unable?)*
S is the national average proportion of owner occupiers moving to soc hsg each year
O is the number of owner occupier households
Q is an annual quote, set at 0.10 in the baseline model
W is the backlog stock of households with existing needs who may require soc hsg
R is the number of net relets of social housing, excluding new build and all transfers

25. There is flexibility in the model to allow for different scenarios, such as varying price and earnings growth, to be tested.

How does the method calculate:

a. Which households can't afford market housing (to buy? or to rent?)

Housing is deemed affordable if it costs no more than 3.5 times (gross) income for single earner households, and 3.5x0.85 times joint income households AND residual income net of mortgage etc is above 120% of Income Support Applicable Amount ("poverty line").

The inclusion of a residual income criterion tends to reduce numbers who can afford in low-price areas – indicates home owners who may find home ownership unsustainable. It has a nil effect in London, most pronounced effect in Northern regions. (ibid: 693)

House price target is lower quartile of local housing market, determined either using the Survey of Mortgage Lenders data (which breaks down by house sizes), or Land Registry price records, re-weighted to reflect actual stock mix as recorded in census. (ibid: 692)

The method uses modelled income data. The calculations for this are quite complicated, but centre around estimation from prevalence of working adults in different types of households, prevalence of occupational classes in areas, with adjustments to reflect prevalence of well and poorly paid industries, car ownership etc. Group base income is estimated from Family Resources Survey. A complete though terse description is supplied in Bramley & Karley (2005).

This model is robust to LA level – demonstrated by comparisons to real sources. (Note that CACI and ONS are also modelled sources)

In addition, a refinement to the model is described which attempts to catch the effect of wealth, as opposed to income, on affordability. This uses data from SEH and from the Family Resources Survey on inheritance, informal loans, gifts and the like.

b. Which households will choose affordable housing?

The model assumes no growth in the private rented sector – the private rented sector will continue to be a transitional tenure for young adults in particular, but 'the model assumes that long-term tenure solutions lie in the owner occupier or social rented sectors' (ibid: 697).

c. Contribution of relets from the existing stock to meeting future needs

Social housing relets are counted in to this model and taken to be the main source aside from owner-occupation to meeting housing need.

"The basic needs model used here compares the key gross flows out of the social rented or 'affordable' sector … This is a systematic model based on secondary data and reasonable assumptions. It calculates need and supply for each LA and aggregates to regions and England as a whole." It is not quite clear which data source is used here, but possibly the HSSA. Bramley (2004) uses the Statistical Bulletin from LA returns in Scotland, and SCORE for HA housing.

Net relets are calculated using two methods, and the average taken: 1) from vacancies arising directly, and 2) from gross lettings, subject to adjustments. 5% are deducted for people originating from RSL stock (source: SHCS – could use SEH for England) and transfers are deducted.

d. Possible changes to the size of the social sector stock

For the approach to calculating relets based on lettings (see above), demolitions are added because it is assumed that they are being demolished because of low demand not unfitness, and so these represent additional potential supply. Also added is the year-on-year change in vacancies, because these are assumed to represent voids now available.

e. Existing empty stock

Does not attempt to take account of housing condition & unfit stock. (ibid:697). Empty stock is tracked by comparing vacancies (see above).

f. Backlog of unmet housing need

In Bramley 2004, unmet housing need for reasons of shortage, suitability, condition and affordability is included. A set of tests applied to the SHCS are described to detect unmet housing need of each sort, and prevalence by need type and household type, and by need type and LA are calculated. A proxy-based estimate is also used (ibid: 31) using an unspecified data source.

A ‘quota’ of 10% is applied to the backlog to give a target number to be housed per year – it is noted that this is one of the most sensitive parameters in the model.

g. Number of newly forming households unable to afford market housing

Estimated by all households with head under 35.

In Bramley(2004), the number of households formed per year is calculated from local population estimates and applying the propensity to household headship for different ages to these.

h. Newly arising need from existing households

Takes account of owner occupiers moving into social renting, eg for needs related to old age

i. Need for intermediate housing

The need for intermediate housing is integrated into this model.

j. What proportion of affordable housing meets the need for mixed communities

Not addressed

k. What proportion of affordable housing is financially viable

Not addressed

Data requirements

Survey of English Housing
Census
Family Resources Survey
Land Registry Price Data
HSSA/RSR/CORE (number of relets)
New Earnings Survey (NES) / Annual Survey of Hours & Earnings (ASHE)
English Housing Condition Survey
Survey of Mortgage Lenders

All except of these except the last are publicly available without charge.

Comments on the methodology

The method as described in recent work is perhaps the most sophisticated fully worked attempt at a gross flows model. It includes a sophisticated income model, which is validated for accuracy against other sources. It also includes a number of other features not found in other models, such as the effect of wealth on affordability, and the use of a residual income requirement as well as income multipliers.

It doesn’t include some data that would affect ‘real’ need – such as dilapidation. It is intended to be very good at testing the effect of, for example, prices on affordability in different scenarios.

It is calculable at district level and above, and uses only publicly-available secondary data sources; there are published examples of worked-through calculations.

This is fortunate, because the calculation method is complex and time-consuming, and, like other gross flows models, the results should be validated by sensitivity testing individual parameters.

Conclusion

26. The partial gross flows approach used here is potentially one of the most robust methods that could be used at regional, HMA and local levels. However, the data requirements are such that it would not be appropriate (or possible within the time frame) to use in the present study.

4) South Nottinghamshire Affordable Housing Study

27. The model is:

All new households 2001-2011
minus
Number who can afford to buy market housing
minus
social housing relets 2001-2011
minus
private sector relets (minus those lived in by students and social classes 1-4) 2001-2011
minus
LCHO built 2001-2011
equals
Number needing affordable housing 2001-2011

28. The model is comparing stock now with stock in ten (and twenty) years' time.

29. The output is an estimate of affordable housing need across the study area, not on a district basis.

How does the method calculate:

a. Which households can't afford market housing (to buy? or to rent?)

The method defines affordable housing as being for those who can't afford to buy or rent. It then assesses the average cost of home ownership of a first time buyers, and classes some private rented housing as affordable housing.

Households need to be able to afford 70% of terraced houses and 40% of semis to be regarded as being able to afford home ownership. It is assumed that households require a loan of 89% of property value (CML data suggests this is the median).

The estimates of the distributions of net income are stated (page 18) to come from data purchased from CACI for each local authority ward in the study area. The income data are for all households because no data is available for new households at the local level.

It is assumed that 27.5% of net income is affordable on housing costs, and these are calculated to include other housing costs such as buildings insurance too.

b. Which households will choose affordable housing?

The method acknowledges that some households have a preference to rent privately rather than in social housing. Including private renting as affordable housing means that it is assumed that some households will choose private renting, but there is no method for assessing how many.

c. Contribution of relets from the existing stock to meeting future needs

The method adds in total relets from social sector and some of the private rented sector as being available to meet needs.

Social sector relets are calculated by taking total size of stock in 10 years time (minus voids) and taking off the estimated 40% of this still occupied by same households. This is based on national data from the Labour Force Survey and the Survey of English Housing. This method is then repeated over a twenty year time span, this time assuming that only 20% of social sector properties will still be occupied by the same tenants.

Private sector relets are calculated by taking total stock size, subtracting the stock lived in by students (assumed not to be eligible for affordable housing) and social classes 1-4 (assumed to live in non-affordable properties) and then assuming that the remaining stock all becomes available (once) between 2001 and 2011 and not at all in the period 2011-2021.

d. Possible changes to the size of the social sector stock

Allows for loss of stock due to RTB (assumes current rate until 2011, based on work by Alan Holmans in 1995) and allows for relets from new stock.

e. Existing empty stock

Allows for 1.5% void rate reducing the total number of relets (1.5% because that is the ODPM good practice suggestion).

Assumes that there is a quantity of unfit stock which is let, a similar quantity of fit stock that is unlet and that the two therefore counterbalance, so can be omitted from the model.

f. Backlog of housing need

These are referred to in this study as "Base needs". They are calculated by adding together:

i. those in mortgage arrears,
ii. concealed families (previously "concealed households") -(defined as all couples and lone parent families living within another household, who are all assumed to wish for their own accommodation),
iii. homeless households in temporary accommodation (excluding "homeless at home")

g. Number of newly forming households unable to afford market housing

The method uses figures from the Joint Structure Plan on the number of households forming between 2001-2011. The county figures are aggregated to the study area, but 1000 households are then added on because of a known development at Gedling. New households forming between 2001 and 2011 are assumed to be: all households in 2011 with heads under age 30 plus one-half of households age 30-39. New households forming between 2001 and 2021 are taken to be all households in 2021 with heads aged under 40 plus one-half of households with heads aged 40-49.

h. Newly arising need from existing households

None – it assumes that all relets are available only to newly forming households.

i. Need for intermediate housing

None

j. **What proportion of affordable housing meets the need for mixed communities**

None. The proportions of affordable housing found needed (more than 100% by 2021) would appear to conflict with a mixed tenure approach to housebuilding.

k. **What proportion of affordable housing is financially viable**

The study acknowledges that the requirements found in this study are much higher than what is achievable and that all new housing would have to be affordable to meet them. The study attributes this to current high house prices.

Data requirements

East Midlands mortgage possession statistics, Department of Constitutional Affairs.
Data from the Joint Structure Plan projections on couples and lone parents living with others
Data on homeless families in temporary accommodation – from ODPM P1E returns.
Data on the annual supply of private sector relets – the source is not given.
CML data on median loan to property value ratios.
Mortgage interest rates, averaged over a 10 year period – CML data
CML data on payment protection insurance
Building insurance premium index on average cost for terrace/semis
National report on housing condition on average repair costs
Retail price index, in order to update costs to 2004 levels.
CACI income data by LA ward, by decile.

Comments on the methodology

There are concerns surrounding the gross household formation projections. Without the South Nottinghamshire projections one cannot ascertain how much of the estimate of new households comes from the half of 30-39 and 40-49 households. But a calculation can be made with figures for England, from the 2002-based projections because the detail of the 2003-based set has not yet become available. These figures are (in thousands)

2011

- Under 30 2,608
- One-half of 30-39 1,913
- **Total** **4,521**

2021

- Under 40 6,903
- One-half of 40-49 1,961
- **Total** **8,864**

The average number of new households formed according to the calculation would be about 450,000 a year in 2001-11 and 435,000 a year in 2011-21. These are higher than the number of new households formed in England as estimated from the Survey of English Housing (SEH). The stated rationale for including one-half of the 30-39 and 40-49 age groups is households formed by divorce. 190,000 new households a year from divorce and separation is improbably high in relation to 150,000 divorces. When a couple part, one of the ex-partners is a continuing household by definition. An estimated 85 percent of ex-members of divorcing couples live independently, i.e 277,500 households from 150,000 divorces. Of the 277,500, 150,000 are continuing households, which leaves 127,500 new households. There are, in addition, separations of unmarried cohabiting couples, though the base population of such households is substantially smaller. Overall, however, 190,000 new households from divorce and separation look improbably high.

The proportion of new households not able to buy at market prices gives a very high figure of 73%. This is much higher than the actual proportion of new households that become social sector tenants, either straight away or after a spell as private sector tenants. The Survey of English Housing for 2001/02, 2002/03, and 2003/04 shows 36 percent of new households as owner-occupiers; and it is likely that a considerable number of private sector tenants could afford to buy.

One contributory reason for the low levels found to be able to afford to buy is the use of the 7th decile of prices of terraced properties to determine affordability. The study acknowledges that the most common price for terraced properties to sell for is £70,000-£80,000, but deems all household unable to afford £97,000 as in need of affordable housing.

The estimate of the distributions of net income is stated (page 18) to come from modelled data purchased from CACI for each local authority ward in the study area. These income data have been widely used and relate to all households. Formal justification would be required for taking the distribution of all incomes to reflect the incomes of new households.

In relation to the calculation of social sector relets, the assumption is made that out of social sector tenant households in 2001 (the stock total less than 1.5% void) 60 percent will have gone by 2011 and 80 percent by 2021. The dwellings vacated are taken to be available for re-letting. These percentages produce 28,845 dwellings vacated by 2011 and 42,018 by 2021, (page 27). Note that this means that only 13,173 dwellings become available in 2011-21, 1,300 a year, compared with 2,900 a year (approx) in 2001-11. However, only departures in 2011 to 2021 by tenants there in 2001 are included, whereas actual departures in 2011 to 2021 will include households that came into the social sector after 2001. It is probable that some (possibly many) properties will become available for relet more than once during either ten year period. 60 percent re-lets in 10 years, 6 percent a year would be a more reasonable assumption.

Private sector re-lets accessible to households unable to afford to buy both in 2001-11 and 2001-21 are taken to equal all households in the private rented sector in 2001 minus student households and households in NS-SEC groups 1 to 4. All other dwellings in the private rented sector are assumed to be re-let by 2011, meaning that none will be available in the period 2011-2021. This is the main reason for the discrepancy found the projected levels of need in the two time periods.

In terms of the division between 2001-11 and 2011-21, even if apportioned in a more plausible way, the 2001-21 total would remain 3,051 affordable homes are stated to be required to meet “base” need (the backlog). When added to the 29,853 affordable homes required to meet future need the total required is 32,904 (equal to 101 percent of all new homes needed). The zero for private rented sector re-lets in 2011-21 contributes to this result. If it were the same as in 2001-11 the 20 year figure for future need would be 15,585. Including “base” need for the affordable need would be 18,636, 57 percent of the overall total. These problems result from using the private rented sector figure as a stock where a flow is needed.

Need from sources other than newly-forming households is ignored. As shown in the appendix to this annex, more than 60% of entrants to social housing nationally are existing households moving either from private renting or owner-occupation, so this is a big omission although it is partly mitigated by the ‘snapshot’ method used.

There is no data available on single people living within another household, and it is acknowledged that this is a problem.

The model assumes that there is a number of let unfit stock, and a similar number of unlet fit stock and that vacant stock can therefore be omitted from the model. But this is making the assumption that new housing should be built rather than unfit housing made good.

The backlog calculation makes no allowance for any housing need from within the private rented sector, despite this being the largest group of entrants to social housing (see annex 5).

More generally, the model has evolved since it was first devised in the late 1990s which used the end date of the then Structure Plan (2011). The 2005 update involved a roll forward to 2021. The methodology made this rather problematic.

Conclusion

30. There are a large number of caveats to this approach as well. Overall, therefore, it would appear that this approach does not provide a practical solution for the East Midlands region as a whole.

ODPM Housing Market Assessment Draft Guidance (December 2005)

31. Unlike the other methods reviewed here, this is draft guidance issued to local authorities carrying out Housing Market Assessment assessments. It does not therefore have an illustrative example showing what kinds of outputs it would produce.

32. It is a stocks and flows methodology based upon the one in the previous DETR guidance, i.e.:

Backlog of current need

This is a gross figure of the total number of households in need at one point in time. It is established either from a household survey, or from the housing register in addition to other local sources (such as hostel move-on requirements). It is then multiplied by a yearly quota (eg 20% if the plan was to eliminate the backlog over 5 years).

minus

Available stock to offset need

This includes any long-term empty properties, as well as any scheduled for demolition. It also includes current occupiers of affordable housing in housing need whose property will become available for reletting if they move. This figure too is then multiplied by the same yearly quota as above.

plus

Newly arising need (annual)

This involves calculating a gross household formation rate by the proportion unable to afford market housing. (nb – the gross household formation rate is not the same as the net change in the number of households, because it is a gross figure). This figure is added to an estimate of existing households falling into need, which is established either from the household survey or from the housing register.

minus

Future supply of affordable units (annual)

This is the annual level of re-lets (and sales of shared ownership properties) from the existing stock.

equals

Net shortfall (or surplus) affordable units per year

33. The output is therefore an annual figure of the required number of units that should be built each year in order to meet future arising need, and eliminate the backlog over an agreed time period. (Typically, 5 years has been used, but it is acknowledged that this is a policy decision)

How does the method calculate:

a. Which households can't afford market housing (to buy? or to rent?)

Without a household survey, it is suggested that modelled income data (such as CACI) is used. A telephone survey of local estate agents is recommended in order to establish entry level property prices for each size of property, and also to establish rental costs. An alternative data source for rental data is the housing benefit applicable amounts.

It is suggested that both the cost of home-ownership and the cost of renting should be established and households only considered unable to afford market housing if they can afford neither of these.

Affordability measures suggested are 3.5 times salary, multiplied by 0.85 for joint income households. For rental affordability, 30% of gross household income is considered affordable.

b. Which households will choose affordable housing?

Using the housing register means that only households who have chosen to register for affordable housing will be included in the backlog. There is no method in place for establishing which of the newly forming households will actually choose affordable housing (as opposed, say, to private rented housing with the help of housing benefit, sharing, or leaving the area).

c. Contribution of relets from the existing stock to meeting future needs

This is covered in the model. The assumption is that, unless there are plans for considerable changes to the size of the stock, relets can be assumed to be similar to recent years. It assumes that the local authority will be able to identify which relets are to existing tenants and which are to new households.

d. Possible changes to the size of the social sector stock

The method says to takes into account known programmes of demolition or new stock already being built.

e. Existing empty stock

The method says to take into account long-term empties, though doesn't define this too precisely. It suggests that there is surplus stock if void levels are over 2% or some properties are long-term empty. The assumption is that these should be brought back into use before additional stock is built.

f. Backlog of unmet housing need

This is covered in the model, using the housing register as the source of information.

g. Number of newly forming households unable to afford market housing

Gross household formation rates are required "from the government". These are multiplied by proportion that appear unable to afford according to income distribution, using 3.5 times single income as affordable, multiplied by 0.85 for dual income households, or 30% of gross household income as affordable in rent. The method says to establish the entry level price of market housing by carrying out a telephone survey of local estate agents. Private rented housing should also be included in this survey and households are not considered to be in need of affordable housing unless they cannot afford either to buy or rent a suitable sized property privately.

h. Newly arising need from existing households

Takes this into account, but is dependent upon very good housing register data.

i. Need for intermediate housing

Recommends running the model twice, using different the different income limits required and the different contributions of relets (or resales).

j. What proportion of affordable housing meets the need for mixed communities

This model does not address this. The guidance says that it is covered in PPS3 instead.

k. What proportion of affordable housing is financially viable

This model does not address this

Data requirements

A single housing register (ie which does not include applicants more than once in cases where they have applied for more than one area, or to several RSLs), capable of identifying:

- o Which applicants are current
- o Which applicants live outside the area/or are also on another district's housing register
- o Which households are in current housing need
- o Which households are transfer applicants

Local data from voluntary and statutory agencies working with the homeless and others in housing need not registered on the housing register.

HSSA data on surplus stock and relets

CORE data on relets

Regeneration programmes of local authorities and RSLs

Gross household formation rates – "from government", not clear on exact data source.

Local authority data on the numbers housed within the last year from the housing register, and outside of it, and the previous tenure of these households.

Comments on the methodology

These are draft good practice guidelines, not yet policy. Unlike the other methods reviewed here it is not possible to establish whether the output of the method seems realistic.

The guidance is unclear as to how gross household formation rates should be calculated.

The method relies on very good quality housing register data, that can distinguish levels of need, dates of application and other information (see above). For sub-regional analysis it is unlikely that the housing registers of the different districts will all provide this level of information in a comparable manner.

Household income data requires modelled data for district (or sub-regional) level analysis.

Conclusion

34. n the absence of a specially commissioned household survey, it would be preferable to use the tried and tested Holmans approach rather than this approach which requires modelled income data (expensive) and very good quality housing register data which are unlikely to be available.

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Appendix to Annex 1

Moves within the social rented sector and lettings to new tenants

Table A.1 shows moves during twelve-month periods into and within the social rented sector (local authorities and RSLs combined) shown in official published estimates from the Survey of English Housing (SEH).

Table A.1 Moves into and within the social rented sector in England

				(thousands)
	2001/02	2002/03	2003/04	Average
New households	79	77	74	77
Moves from private rented sector	87	83	88	86
Moves from owner-occupation	35	37	41	38
Total moves into the social rented sector from elsewhere (= "new tenants)	**201**	**197**	**203**	**200**
Moves within the social rented sector	229	192	204	208
of which: RSL to local authority	(16)	(13)	(8)	(12)
Local authority to RSL	(38)	(33)	(37)	(36)
Total moves to social rented sector dwellings	**430**	**389**	**407**	**409**

Sources: *Housing in England 2001/02*, Table A2.2
Housing in England 2002/03, Table A2.1
Housing in England 2003/04, Part 3, Table 6

Where households move more than once in the 12 months being interviewed the SEH records only the most recent move. Households coming into the social rented sector and then transferring to another social sector dwelling within 12 months will therefore be missed. So too will households that move out of the social rented sector within 12 months of entering it. The number of households entering the social rented sector ("new tenants")l is therefore likely to be under-stated in Table A.1, though probably not by much.

Tables of lettings by local authorities and RSLs are published by ODPM in the annual *Housing Statistics volume*. Figures for 2001/02 to 2003/04, taken from the 2005 edition, are shown in Table A.2.

Table A.2 New lettings by local authorities and RSLs: England

			(thousands)
	2001/02	2002/03	2003/04
Lettings by local authorities			
New tenants	196.5	191.1	161.9
Transfers and exchanges	92.5	81.8	66.6
Total	**289.0**	**272.8**	**228.6**
Lettings by RSLs (a)			
New tenants	93.8	94.0	85.8
Local authority tenants	24.3	23.0	18.9
RSL tenants	41.7	41.5	39.7
Total	**159.9**	**158.5**	**144.3**

Note: (a) The RSL figures are shown in the published source to the final digit, but are rounded for comparability with the local authority figures

Source: ODPM, Housing Statistics 2005, Tables 6.11 and 6.12

When local authority and RSL figures for lettings are combined, lettings by RSLs to local authority tenants and vice-versa have to be excluded and treated as moves within the social rented sector. The former are distinguished in Table A.2, but the latter are not. Lettings by local authorities to RSL tenants are therefore represented by moves from RSL to local authority in Table A.1. A comparison between estimates from SEH and reported figures by local authorities and RSLs (HIPI/HSSA and CORE) is in Table A.3.

Table A.3 New lettings by local authorities and RSLs compared with estimated moves to local authority and RSL dwellings

			(thousands)
	2001/02	2002/03	2003/04
Moves – SEH "Lettings"			
New tenants (i.e from outside the social sector)	201	197	203
Intra-sector moves	229	192	204
Total	**430**	**389**	**407**
New lettings (LA and RSL data)			
New tenants Local authority RSL Less: RSL moves to LA	 196.5 93.8 -16	 191.1 94.0 -13	 161.9 95.8 -8
Intra-sector lettings			
LA transfers and exchanges	92.5	81.8	66.6
plus: RSL moves to LA	+16	+13	+8
RSL letting to LA tenants	24.3	23.0	18.9
RSL lettings to RSL tenants	41.7	41.5	39.7
Total intra-sector lettings	**175**	**159**	**133**
Lettings to new tenants plus intra-sector lettings	**449**	**431**	**373**

Source: Tables A.1 and A.2

A comparison is made in Table A.4 between the SEH figures that represent lettings to new tenants and intra-sector lettings and the figures provided by local authorities and RSLs and tabulated in *Housing Statistics 2005*.

Table A.4 Comparison of totals of "new tenants" and intra-sector lettings by local authorities and RSLs combined

(thousands)			
	2001/02	2002/03	2003/04
New tenants			
SEH	201	197	203
HIPI/HSSA and CORE	274	272	240
Intra-Sector			
SEH	229	192	204
HIPI/HSSA and CORE	175	159	133
All Moves and Lettings			
SEH	430	389	407
HIPI/HSSA and CORE	449	431	373

Source: Calculated from Table A.3

Interpretation is made more difficult by the surprisingly low figures for 2003/04 from HSSA and CORE. But in all years SEH figure for "new tenants" is lower and for intra-sector moves higher than the HSSA/CORE figures, which suggests that the distinction between lettings to new tenants and to existing tenants moving is drawn differently there. Clearly there are problems. Differences between SEH estimates of lettings to new tenants by LAs and HAs and HIPI and CORE were last looked at in work reported in A.E. Holmans and Merron Simpson, Low Demand: *Separating Fact from Fiction* (published by the Chartered Institute of Housing in 1999).

Figures of 270,000 a year in 2001/02 and 2002/03 for lettings to new social rented sector tenants look improbably high in relation to numbers households leaving the social rented sector through moves to owner-occupation and private renting (80,000 a year, from SEH). New supply was about 20,000 a year. Dissolutions due to divorce and separations might add 40,000 a year at most, which leaves a discrepancy of around 40,000.