Leicester & Leicestershire Housing Market Area

Managing and Updating of Data Project

Final Report

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Leicester data project - recommendations

1. Investigate options for an HMA or regional centralised data collator and disseminator, such as HI4EM or LSR-online, for bulk data purchase to save substantial amounts on Land Registry data, PRS, Experian, etc.

2. Investigate further with the Data Collator for them to provide a service to assist with collection and compilation of common data, and upward reporting, as far as this continues.

3. Set up systems and develop skills to obtain the input data for the needs and type/size models. The input data will also provide some elements of a housing market monitoring system. Investigate options for filling gaps and reducing weaknesses as suggested in the report.

4. Housing strategy sections should get and develop skills in use of a wider variety of data analysis software, including SPSS, Access, GIS, visualisation systems. HI4EM maybe able to obtain better prices for possible bulk purchase of analytical software

5. Housing strategy sections should have their own PCs and more autonomy to enable them to get, install, and try analytical and visualisation software and not be tied to thin client systems. Housing strategy and planning would benefit from wall mounted big screen monitors in their offices to display data and maps of area for joint visualisation, exploration and discussion.

6. Support and promote the use of CDPsmart, and begin to build a database of individual stock records for both new completions, and over time all existing stock, linked through the NLPG.

7. Begin to request data from other departments, especially Council Tax, Housing Benefits and Environmental Health on aspects of the housing market system such as occupation levels, empty homes, migrations, private rented properties, to gradually establish shared data use for housing strategy.

8. Use the opportunity of the introduction of Choice Based Lettings and its new systems to utilise applications, bidding and lettings data more effectively to understand housing need and turnover. Identify a common allocations sub area geography, and ask applicants where they prefer in principle as well as intelligence from actual bidding

9. Where housing and planning systems are and will remain incompatible look at adjusting field names and formats for the data to make them compatible to be able to collect comprehensive and consistent data across the HMA.

10. Housing strategy sections should set up internal trend monitoring systems for key housing market system variables such as house prices, private sector rents, empty property, lets, voids, turnover rates, numbers of bids, etc, based on HI4EM or similar aggregated sources or their internal systems using regular queries to extract the data, and recording it in electronic format to track trends, patterns and locations, and watch for step changes

LEICESTER & LEICESTERSHIRE
MANAGING AND UPDATING OF DATA PROJECT 2010

B.Line Housing Information
Summary of findings and recommendations

- The project builds n the work in the Leicester&shire Strategic Housing Market Assessment in 2007/8. It involved engaging with multiple departments across each local authority in order to assess the capacity for collecting, using and maintaining data in relation to the Strategic Housing Function.
- Several gaps were identified in the data available, specifically relating to the private rented sector, access to finance (deposits etc), accurate data on migrations, detailed data on stock completions, housing demand data and incomes data.
- A number of suggestions are made regarding how these gaps may be addressed, including: Use of modelled data from Experian, use of proxy measures such as mortgage approval trends and savings rates; increased use and implementation of the CDPSmart System (used to record Planning Data); as well as various other sources of data with varying levels of accuracy, effectiveness and achievability.
- The project report is accompanied by two housing market models for each participant local authority, - one which determines housing need (in terms of the number of units of affordable housing required), and one which assesses the optimum housing market mix (in relation to the typical property type and size needed by different household types, and their typical duration in those properties), and best social housing type/size mix. Both models have variable inputs and explicit policy options dependent on evidence based judgments.
- The report outlines the various datasets available to Strategic Housing departments in monitoring housing market trends, along with their limitations and sources.
- There is a detailed look at the role of Shared Ownership and the Intermediate Housing market, and how this relates to housing need.
- Use of administrative and other data sources in assessing needs for Supported and Special Needs housing and services are explored, and practical examples given.

Issues highlighted

- Some staff show a lack of relevant data handling and manipulation skills and may require training and/or automated tools to assist with handling.
- In most authorities there are numerous barriers to performance, including IT access issues, time constraints, and software constraints.
- The capacity of staff to use data to shape and guide strategy is impacted by a consistent demand for upward reporting. This data gathered in this way is often very generalised, averaged and one dimensional and does not seem to lead to any effective decision making and effective, targeted

policy , but has instead been used to set targets which are unlikely ever to be delivered.

- Previous reports and existing research are not kept in a centralised manner, often resulting in repeat work. This is partly due to a 'paper' culture rather than using comprehensive, searchable storage of data, information and reports in IT based knowledge and archiving systems. Systems such as LSR online and HI4EM can help address this.
- Software constraints are a key barrier to the effective functioning of the strategic housing role. The GIS systems available in some local authorities do not carry out the desired functions, and are used more for signposting/recording data rather than analysis.
- IT server platforms and security measures can impose severe restrictions on the capacity of Strategic Housing Officers to carry out data analysis and manipulation, particularly where the installation of new software for use by Strategic Housing involves a large set up cost in its installation across the entire network.

Key Recommendations

- Local Authorities need to consider the use of a central data provider such as Hi4EM (Housing Intelligence for the East Midlands), LSR Online, or Hometrack which can operate as a central source of datasets for use by the strategic housing function. As well as negotiating bulk purchase of otherwise expensive datasets across the region (for example Experian and CACI data), the provider could collect, clean and collate data for upward reporting, and prepare datasets for use. This would involve a regular cost to the local authority but is likely to be cheaper than buying Experian or CACI data on an individual basis, as well as providing significant time savings through provision of an upward reporting function.
- Choice Based Lettings provides a key opportunity for improved understanding of housing market systems, particularly in relation to household aspirations, if this data can be extracted.
- Strategic Housing departments need to engage with stakeholders throughout the data analysis and interpretation process, particularly in light of the current 'Open Source Planning' and 'Localism' agendas.
- Strategic Housing Departments will be most effective in their roles if they have access to a wide variety of software which enables them to collate, manipulate, analyse and present datasets in a meaningful and flexible way. Software could include: GIS Systems enabling analysis; Excel; Access; SPSS or similar. The costs of providing the necessary software internally are relatively modest compared to the long term costs of outsourcing data analysis work to consultants.
- Ideally the Strategic Housing function should collate and maintain a database containing a wide variety of data relevant to the housing market system, including: Lets; Transfers; Housing Register; House Prices; Sales; Repossessions; Homelessness; Private Rented Sector; Rent Levels; Local Housing Allowance Rates and gaps with market rents; Completions (including affordable housing completions) etc. Updating and maintaining these datasets should be a significant part of the Strategic Housing role.

Leicester & Leicestershire Housing Market Area

Managing and Updating of Data

Table of Contents

Leicester & Leicestershire Housing Market Area

Managing and Updating of Data

Research project 2010 –final report – version 1.5

1 Aims of the project

1.0.1. The principle purpose of this project is to help develop a set of procedures for managing and updating strategic housing and planning information in Leicester and Leicestershire. The principal output of the study as set out in the project brief is a report to:-

- Identify any gaps in the data available.
- Set out recommendations on the most robust and effective ways of closing those gaps with an assessment of their effectiveness.
- Outline the resources, systems and expertise required to measure and evaluate fluctuations in the housing market/economy and to make the necessary adjustments to the assessments of the need for affordable housing, including the property types, bedroom sizes and tenures.
- A methodology for updating the affordable housing requirement and its constituent elements. Each individual step should be explained and sourced. The key inputs which require regular updating should be explained and sourced. The model should be presented in the form of a fully annotated flowchart (preferably in a spreadsheet).
- An update of the current affordable housing requirement (using the methodology as set out above), stating to what extent the requirement will incorporate existing planned supply or is in addition to existing planned supply.
- Identify the most robust evidence for meeting the objectives of the project.
- Include clear and transparent justification for any assumptions, judgments and findings.
- Provide an estimate of future households who require market housing by household type for each district, and demonstrate the methodology used.

1.0.2. In addition there were initially various other requirements and qualifications, including:

- Fully utilise opportunities of the Hi4Em system
- Undertake gap analysis within the Hi4Em data sets at local level
- Update needs and type/size mix models developed in the SHMA
- Assess the existing SHMA affordability model in the light of recent changes in the housing market/economy
- Provide a step-by-step guide to completing a SHMA update (property type, bedroom size and tenure)
- Establish a rolling system, which monitors the housing market and the local and national economy on a quarterly basis

1.1. Methodology

1.1.1. This required a wide ranging and interconnected methodology, using quantitative and qualitative techniques, including:-

- Finding sources of relevant data, handling large datasets in different formats, assessing their quality, and then analysing and interpreting them using a variety of analytical software applications
- Modelling to produce estimates of need and type/size mix, combining numerous elements and variables
- Refining, labelling, annotating and producing guidance notes and flow charts for the models to make them more accessible and usable
- Interviews with a wide range of departments in each of the local authorities to find out more about the data they collect and compile, or generate internally from operational processes, that may be of use in understanding housing market systems

- Looking at the IT systems in the participant local authorities, to see where there was commonality and hence the possibility of shared working
- Assessing where lack of appropriate software or other IT issues might cause blocks in carrying out the strategic housing function
- Reviewing improvements on key data functions, for example the CDP Smart Planning recording system
- Investigating methods of handling and presenting data which could help improve understanding of housing market systems and lead to better, more evidence based policy and decisions

1.2. Participants

1.2.1. All the local authorities in Leicester and Leicestershire were participants in the project - that is: Blaby District; Charnwood Borough; Harborough District; Hinckley & Bosworth Borough; Leicester City; Leicestershire County; Melton Borough; North West Leicestershire District; and Oadby & Wigston Borough Councils.

1.2.2. Many different departments from each local authority also assisted with the project, including:-

- Council Tax
- Housing Benefits
- Environmental Health – including private sector issues , decent homes, empty homes
- Planning Strategy
- Development Control
- Housing Repairs Planning
- Energy Efficiency

- Housing Options, Lettings and Allocations, including Choice Based Lettings
- Housing Management and Performance Monitoring
- Housing Development and Strategy

1.2.3. The project therefore involved extensive cross linking and potential 'joining up' not only of different councils, but also of different departments and sections. This process was found to be quite useful in itself in some of the local authorities, because it provided an opportunity for Housing Strategy and information staff to find out more about the activities of other departments by sitting in on the interviews.

2. Gaps and weaknesses in the data, and filling them

ii. Identify any gaps in the data available

iii. Set out recommendations on the most robust and effective ways of closing that gap with an assessment of their effectiveness

2.1.1. The project built on the work carried out for the SHMA, which developed needs and type/size mix models (these are discussed later in the report). Key gaps can therefore be identified from what is required, but either missing or of poor quality, to make such models a more realistic and comprehensive reflection of actual housing market systems. Recommendations for 'closing the gaps' are given after each 'gap' is discussed.

2.2. The Private Rented Sector

2.2.1. The largest and most striking gap in the data in this respect is on the Private Rented Sector (PRS). The PRS plays an increasingly important role in meeting housing demand and housing need, especially for certain household types, ages and lifestages. This was confirmed by reports from the participant local authorities that the PRS is a means of preventing homelessness, with significant numbers housed through housing options PRS deposit schemes. Although recorded as part of the prevention of homelessness, this does not often seem to be cross referenced with the role of the PRS.

2.2.2. It is the extent and nature of the Private Rented Sector in local housing market systems which constitutes the main gap, as there is a growing body of more qualitative research on the PRS nationally and generally. The Rugg report[1] (2008) gives an extensive analysis of the many different sub markets of the PRS – at least ten are identified –

[1] http://www.york.ac.uk/inst/chp/Projects/PRSreview.htm

and provides a sound conceptual basis for understanding the sector better. In 2010 the Building and Social Housing Foundation published *Tenure Trends in the UK*[2], which found that the number of households in the private rented sector increased by one million households between 2005 and 2009, and suggests that the PRS could become bigger than the social housing sector within a few years if current trends continue.

2.2.3. As this general research confirms, this gap exists because the PRS is fragmented and widely dispersed between many different owners, landlords and agents, and because there is no system or requirement for recording and monitoring it. Anyone letting property privately can do so without informing any regulatory or monitoring body. One recommendation of the Rugg report was to set up a national database of landlords, but this was rejected by the coalition government soon after taking office as likely to increase bureaucracy.

Filling the PRS data gap

2.2.4. This means that other methods and sources must be used to try to obtain data to fill this gap. The opportunity to do this may come through Hi4EM (Housing Intelligence for the East Midlands, www.hi4em.org), who are negotiating with Experian to 'bulk buy' a whole range of detailed data, or a similar centralised data resource provider.

[2] http://www.bshf.org/published-information/publication.cfm?lang=00&thePubID=46C4A5EA-15C5-F4C0-99C662FE48B048B9

The variables that can be supplied by Experian are:-

Figure 1 Data which may be purchased in bulk by Hi4EM

Variables	Source	Description
Residence Type	Modelled	Identifies whether a property is terraced, semi-detached, detached, a flat or a bungalow.
Tenure/Home Ownership	Modelled	Identifies whether a property is owner occupied, council/housing association or privately rented.
Council Taxation	Actual	Based on actual council tax bands for residential properties
Age of Property	Modelled	Identifies the likely propensity of the age of the property
Number of Rooms	Modelled	Identifies the likely propensity of the number of bedrooms within a house
Property Value	Modelled	Provides an estimated valuation of property as of 1st March 2010
Length of Residency	Actual	Identifies the length of time that the longest residing head of household has been at the same address
Household Mosaic	Actual/Modelled	Identifies households into one of 15 Groups & 69 Types based upon outlook, behaviour and characteristics
Household Income	Modelled	Identifies the likely household income at an address
Household Composition	Actual	Identifies the type of family living at an address.
Outstanding Household Mortgage	Modelled	Identifies the value of the outstanding mortgage at an address
Employment Status	Modelled	Identifies the individual's employment status, for example employed full time or unemployed.
Households with Children	Modelled	Identifies whether there are likely to be children (aged 0–17 years) in the household.
Family Lifestage	Actual	Shows the combined stage of life and family status, including children.
Household Carbon Emissions	Modelled	Identifies the level of direct and indirect CO2, greenhouse gas emissions
Financial Stress	Modelled	Identifies an individual's level of indebtedness
Personnel Debt	Actual	Identifies the number of CCJs issued to a household
Home Improvements	Modelled	Identifies the likely propensity of a household to make improvements to their home

Source: Hi4EM

2.2.5. Experian variables are derived from the UK consumer dynamic database, which is the most accurate and detailed view of UK adults, covering 99.7% of them. For each adult the database contains over 400 characteristics relating to demographics, socio-economic and consumer behaviour. These characteristics are made up of modelled, derived or actual information – or a combination of all 3. Experian's coverage and levels of accuracy are comparable to the Joint Industry Committee for Population Standards (JICPOPs 2009). As of July 2010, data released from the UK Consumer Dynamic Database contains 48.6 million records at person level and 24.3 million records at household level respectively. This degree of accuracy, whilst not comprehensive, cannot be matched by any other available source.

2.2.6. The cost of this data for the whole East Midlands region as a bulk sale to HI4EM is understood to be under £20,000. At an average cost of £500 for the 40 local authorities in the region this appears to be extremely good value. This cost will be weighted so that larger authorities will pay substantially more than smaller ones. To access it, local authorities would need to subscribe to the Hi4EM service in its new guise after the demise of the regional bodies, or set up some similar support, data and resource provider, either for Leicester and Leicestershire, or for some other cross boundary area. There would also be a discount for a 'County-wide subscription'.

2.2.7. The Experian data on private renting does not as yet include rent levels, either real or modelled and attributed. While there are other general sources that can be used it would improve the value of this data if it could also contain rents from some robust source.

2.3. Deposits, and resources from other sources

2.3.1. The 'Credit Crunch' brought an end to mortgages up to 100% or more of property value, and brought a requirement for deposits of typically 25%. This situation has eased since, and more 90% mortgages are now available, but 100% loans are still difficult to obtain.

2.3.2. This means that the assumption within the needs model that a mortgage would be available if household income could support it no longer applies. However, data on the amount of capital that potential buyers have access to as deposits is, and always has been, a significant gap in the data and inputs to needs estimates.

2.3.3. This has been addressed by looking at the changes in the number of loans approved over time using Bank of England Regulated Mortgage Survey data in the Survey of English Housing, and Council of Mortgage Lenders, as shown in the table below. This is a proxy measure, assuming that the reduction in numbers of mortgages granted reflects households who cannot now obtain one to meet their housing need. However, it could also be because they do not want to buy in the current market.

Figure 2 Trends in loans to First Time Buyers

Year	Approvals		
1998	909		
1999	1,062		
2000	1,055		
2001	1,194		
2002	1,312		
2003	1,160		
2004	1,056		
2005	986	*Baseline - average 98-07*	
2006	1,138	*1,086*	Proxy for
2007	991	Reduced % approvals	'can't obtain mortgage'
2008	468	43%	57%
2009	758	70%	30%
2010	672	62%	38%

*2009 extrapolated from CLG and CML website data

2.3.4. Taking the average from 1998 to 2007 as a baseline for 'normal' mortgage approvals the reduction on this can be derived from the current number of approvals, giving the remainder as a proxy indicator of those who could afford, but cannot now obtain a mortgage – accepting that this may not be the whole reason.

2.3.5. A more direct measure of access to deposits would improve this aspect of the model. NHPAU research *Housing affordability: a fuller picture*[3] (2010) also recommended that the *deposit measure: deposit required as a proportion of household income after tax and national insurance contributions* should be a new affordability indicator.

2.3.6. However, as with all the data gaps, it is there because it is difficult to fill. It is possible to obtain indicators of the level of savings households have, but these all have serious shortcomings. Some data on levels of deposits is available, but it will typically give the average deposits of buyers, and not how they were funded. For example the CML data shows deposits averaging 25% through 2009 and 2010 - but this simply says what successful applicants for mortgages provided as a deposit. What is required it the proportion of households needing housing might have access to such amounts, in order to estimate the proportions which can and cannot afford to buy.

[3] http://www.communities.gov.uk/documents/507390/pdf/14657171.pdf

Figure 3 First time buyers lending

Table 2: First-time buyers, lending and affordability

	Number of loans	Value of loans £m	Average loan to value	Average income multiple	Proportion of income spent on interest payments
May 2010	**14,800**	**1,800**	**75%**	**3.14**	**13.2%**
Change from April 2010	+2%	+6%	75%	3.16	13.5%
Change from May 2009	+8%	+20%	75%	3.04	14.9%

Source: Council of Mortgage Lenders

2.3.7. Household surveys, either local and specific such as housing needs surveys, or more general like CORE logs, can give some information about deposits. This produces figures for those households that complete the relevant questions, but questions on savings are sensitive and often not answered. For example, in Leicester City's 2002 survey, the savings question was answered by just 12% of respondents, 54% of which had no savings, and 2% had savings of over £5,000 – a figure that might be considered a minimum to fund a deposit, even in 2002.

2.3.8. In the CORE data for RSL sales, (mainly shared and low cost home ownership), for 114 sales the deposits paid were recorded as:

Figure 4 Deposits paid by buyers of RSL sale properties

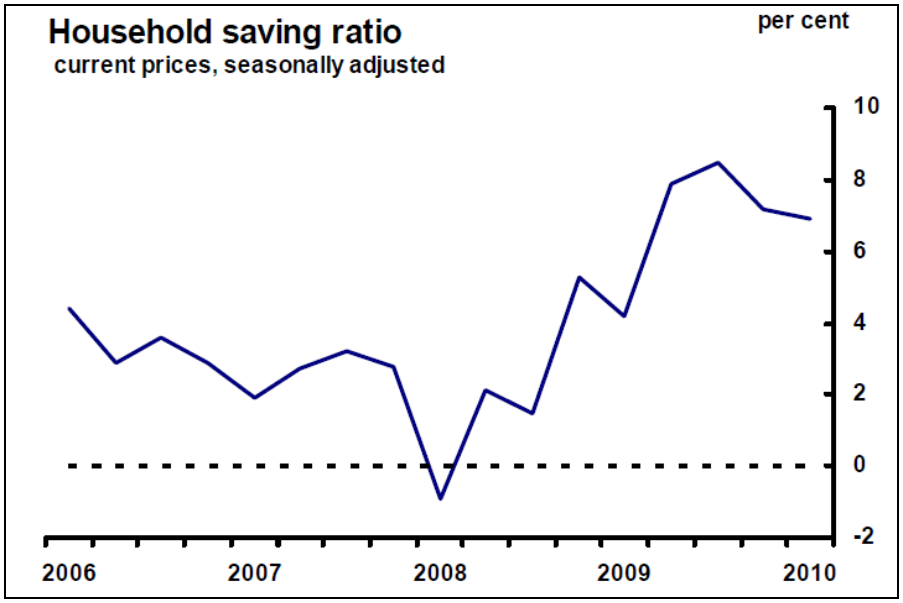
Deposit paid	% of all sales
0 (zero)	32
under £2k	16
£2-3,000	11
£3-4,000	8
£4-5,000	4
£5-10,000	9
£10-20,000	9
£20-40,000	5
over £40,000	6

Source: CORE

2.3.9. However, from the related responses on their circumstances many of these had equity from a sale, for example following a relationship breakdown.

2.3.10. Secondary data on savings tends to give the 'savings ratio' – what percentage of income 'average' households currently save 'on average'.

Figure 5 Household savings ratio



Source: HM Treasury

2.3.11. A major problem with data on deposits, however, is that they often do not come from the household's own resources, but from other sources, and so cannot be measured by looking at the households in potential housing need themselves.

2.3.12. Parental financial support for their young adult children to buy for the first time is now very common, and has been cited as a key sustaining factor for first time house purchases. In 2009 the Council of Mortgage Lenders reported that as many as 80 per cent of first time buyers aged under 30 were receiving help from parents to find a deposit. About 40 per cent had done so before the credit crunch.

Filling the deposits and resources data gap

2.3.13. Solutions to plug this particular data gap are not easy. Possibly local lenders could be asked to provide figures, but there is little history of joint working with them. Perhaps there may be better contacts through other departments such as Building Control or Home Improvement grants sections in Environmental Health or similar. Hi4EM did at one stage have more contact with lenders through its exploration of equity release products, but this has not developed as intended.

2.3.14. Another alternative could be to ask local conveyancing solicitors, who tend to handle the actual deposits, and are also likely to know sources. This would be a new and probably difficult source which would initially cause much defensiveness and suspicion, but if it were made very clear that only summarised and anonymised data was wanted they might consider it. An approach by the Land Charges section, or perhaps through the local Law Society by local authorities could be better received.

2.3.15. However, these are all speculative, and generalised figures from research such as that by CML quoted above may be the only realistic option.

Mortgage rationing

2.3.16. The credit crunch of 2008 and a continuing tighter lending regime meant that mortgages became harder to obtain, and fell from an average of over a million loans a year from 1998 to 2007, to less than half a million in 2008. This was therefore incorporated into the needs model by adding a function to adjust the number who, though they could afford to buy on the basis of household income and entry level prices, were now less likely to be able to get a mortgage.

2.4. Migrations

2.4.1. Migrations can have a substantial effect on the housing demand/supply balance, and hence on prices and affordability. However accurate and up to date data on migrations is not readily available, and tends to come in snapshots so that the cumulative effects are not clear. Published migration data is mostly only available at district level or above. Estimates for people aged 18-35 who move most frequently are difficult. Estimating migration to and from overseas is particularly difficult, even at national level.

2.4.2. There are a number of commonly used sources. They include:-

- CLG Migration Statistics Unit estimates derived from the National Health Service Central Register (NHSCR) or Patient Register Data Services (PRDS), which records patients who re-register with a different GP in a different local authority area. It does not cover people who move but do not re-register, which includes many young men, people who move within a local authority area, or those who move to a nearby local authority but do not change GPs – important when there are flows from the city to the suburbs and villages.
- The Census records people who lived at a different address within one year before, and the data is made available eventually at Output Area level for both origin and destination. However, in the previous Census disclosure control safeguards made most cells '3' to reduce the possibility of any individual being recognised and tracked.
- The International Passenger Survey, which samples passengers entering and leaving the country.
- National Insurance numbers allocated can give an indication of migrant workers coming into the UK.

2.4.3. The ONS Migration Indicators Tool from the ONS Population Estimates Unit brings together some information on annual change from ONS Migration Statistics Unit (MSU), Annual Population Survey (APS), the Department for Work and Pensions (DWP), EU accession

country worker registration Home Office (HO) and Patient Register Data Services (PRDS). Other summary sources are the ONS Population Estimates Analysis Tool, http://www.statistics.gov.uk/statbase/Product.asp?vlnk=14060 Components of Change table.

2.4.4. Migration within the UK by age and sex group at district level may be obtained from ONS Migration Statistics Unit (MSU) http://www.statistics.gov.uk/STATBASE/Product.asp?vlnk=7070. The Census of Population also provides migration information by age and for areas smaller than districts. At Middle Super Output Area (MSOA) level, ONS have also published annual experimental estimates of Population Turnover by broad age band, although these are due for revision at present.

2.4.5. Factors for migrations are also included within the household projections, based on these types of sources. However, due to the various processes involved in producing the projections the migration elements tend to be quite old, and hence can miss more recent flows which may be having a marked effect on housing market systems. For example the influx of migrant workers from Eastern Europe from 2004 on was not incorporated until the 2006 based projections came out, and by the time these became available it had passed to some extent - it fell by 55% in 2008/9.

2.4.6. What is also often even less well recorded is whether migrants stay within an area long term, or move elsewhere, either to another part of the UK, to their country of origin or a different country. Migrant communities can often have different and mixed trajectories. For example many of the Vietnamese 'boat people' who first came to Leicester on dispersal programmes in the 1980s, later moved again to Birmingham and Manchester where larger communities formed. Each case depends on that particular community, collectively and on individual household behaviour.

2.4.7. As the household projections already include a migration factors - albeit with reservations as discussed - these have been not been included as separate items in the needs models. However it is useful to track and monitor migration flows as far as possible anyway, as they can have significant effects on demand, and are not reflected in the household projections until some time after the trends may have changed.

Filling migration data gaps

2.4.8. The Office for National Statistics has been running a project on Improving Migration Statistics for some years now[4] . This could in time bring about better and more timely data, but other developments, such as the scrapping of ID cards, will also limit progress. It seems likely that migration data will remain limited and lacking in robustness for the foreseeable future.

2.4.9. Another potential source for internal moves and migrations not currently much used but with potential is accounts ending in Council Tax databases. When a Council Tax account holding household moves home, its account is ended and a forwarding postcode recorded, if known, to collect any Council Tax due. This gives an origin, destination, date of move, and other attributes such as an indication of the type and size of house in the Council Tax band, and whether a single person from the discount code.

2.4.10. This could in theory produce much more detailed and up to date data, but must be extracted by queries form each local authority, and from the exporting authority – they are not interested in previous addresses.

2.4.11. However, over recent years Council Tax departments have become much more willing and able to assist with such data extraction and queries. There are really only three main players providing

[4] http://www.ons.gov.uk/about-statistics/methodology-and-quality/imps/index.html

Council Tax database software – Academy, Civica, and Northgate/Anite[5] . Another major player – IBS - was taken over by Civica in 2009. This means that the same SQL queries should work in many different local authorities, saving much effort in rewriting them each time.

2.4.12. An article describing use of Council Tax data for mapping migrations is at http://homepage.ntlworld.com/b.line/using_CTax_data_for_mapping_migrations4.PDF.

2.4.13. To comprehensively track all internal UK migrants to Leicestershire would therefore require data from all authorities where migrants come from - potentially across the whole UK. They would also presumably want to have the same data. This would therefore require a major exercise in data extraction, handling and interpretation, but could perhaps be tackled through Open Government data initiatives with Revenues and Benefits Liaison groups, the Valuation Office Agency (VOA) which carries out Council Tax valuations and appeals, and the main IT suppliers.

2.5. Supply data – completions, lettings and sales

2.5.1. The supply of social and affordable housing is the 'credit' side of needs estimates. It is recorded by the local authorities, arms length management organisations (ALMOs) and housing associations making lettings, and the problem here is not so much lack of data, but timing, reconciliation of different sources and what should be included as new supply.

2.5.2. Summary lettings data is recorded in the Housing Strategy Statistical Appendices (HSSA) annual returns to CLG, and is

[5] Socitm, the local government IT managers association, estimated that before Capita's takeover of IBS, 47% of authorities were using Northgate/Anite software, 28% Capita/Academy, 15% IBS OpenRevenues, 5% Civica and 2% in-house.

eventually published on the CLG website as spreadsheets. However the time delay often means that it is mainly useful for historical comparison, not for monitoring and modelling current needs.

2.5.3. The CORE system of Continuous Recording of lettings and sales for housing associations and local authorities also gathers supply side data, and in much greater detail. As it can be collected in electronic format for submission in a continuous process by the providers themselves, it is in a format which can be collated centrally and used for ongoing monitoring of the whole HMA. At present providers tend to use their own housing management recording systems to monitor their own lettings, rather than also look at patterns in nearby areas. If their own CORE returns are stored, they do not appear to be readily accessible or used for monitoring

Improving the affordable supply side data

2.5.4. The introduction of a common Choice Based Lettings (CBL) system for the county authorities will provide an opportunity to set up a common monitoring system. This project has already liaised with the CBL project manager and steering group, and has made suggestions as to the types of data that the CBL scheme could collect and generate.

2.5.5. Another simple advance will be a consistent way of describing properties. These are understood to be:-

Studio flat
1 bedroom flat
1 bedroom house
1 bedroom bungalow
2 bedroom flat
2 bedroom house
2 bedroom bungalow
3 bedroom house
3 bedroom flat/maisonette
3 bedroom parlour house
4 bedroom house

Homes designated for elderly people***
Studio Flat
One bedroom flat
One bedroom bungalow
Two bedroom flat
Two bedroom bungalow

2.5.6. The CBL system should also allow better and more consistent interrogation and extraction of data on the household characteristics of applicants and new tenants. Leicester City is not part of the wider County CBL scheme, but set up its own in April 2010. It uses fairly similar but not identical property categories. There are combinations of 1 to 5 bedrooms in one field and house, bedsit, bungalow, flat, maisonette or sheltered in another field.

2.5.7. However for strategic information the key issue is that data is or can be made compatible, not that the systems have to be the same. Clearly with only two systems rather than seven it will be much easier to reconcile and collate the data to give a more consistent view of allocations and lettings across the whole HMA.

2.5.8. As the county CBL system is still being set up it is too early to start this data reconciliation, but from initial analysis of the categories to be used it appears reasonably straightforward that a common dataset could be produced showing all lettings by type, size, and location to give a consistent, comprehensive and detailed picture of affordable supply.

2.6. Housing stock, planning permissions and completions data

2.6.1. A 'place shaping' approach to planning as well as increased localism will require better knowledge and understanding of the mix of types and sizes of housing within any area, so that the general strategic planning framework of 'Where are we now? Where do we want to be? How are we going to get there?' can be applied and based on firm evidence.

2.6.2. A baseline picture of the type and size mix can be obtained from Census data. The Strategic Housing Market Assessment (SHMA) attempted to link together tables on accommodation type (detached, semi, terraced, flats), and number of rooms using various assumptions. Following this a Commissioned table (C0956) was requested after the SHMA, which links these together at source by Lower Super Output Area (LSOA) level.

2.6.3. Although this gives many complicated, and some unlikely combinations, (e.g. a one room detached house), and is at a fairly large scale – an LSOA is around a thousand households – it does give basic and reasonably finely grained picture.

2.6.4. More difficult to source are completions added since 2001. Local planning authorities produce Annual Monitoring Reports of development activities in their areas, but these are paper reports meeting largely top down information requirements related to government targets on total units, brownfield development, density, and affordable housing.

2.6.5. Until recently, local authority planning data systems were a mixture of spreadsheets, databases and some proprietary systems. These had developed in piecemeal fashion over the years, with different structures, fields and naming systems, so that any attempt to bring the data together to give a comprehensive picture, as was attempted in the SHMA, proved to be almost impossible.

Improving completions data

2.6.6. In the long term such Planning data would be much better held in a spatially enabled database, and the basic record unit of the system should eventually be **each individual dwelling**.

2.6.7. Each dwelling record could then have a range of attributes attached to it held in separate fields, such as which site it is on, floor area, year approved, year built, type, size, cost, sale price, thermal insulation (SAP) rating, and so on. This would provide a fully comprehensive and detailed dataset on the stock as an evidence base for housing planning.

2.6.8. Planning monitoring has been largely site and total numbers built based, but as strategic planning through 'plan, monitor, manage' in complex modern housing markets becomes more established and understood, the need for better strategic housing monitoring and intelligence systems increases.

2.6.9. The database record would still start with an application for a site, but data for individual completed properties would be added as constituent units of each site as they are completed to form the underlying base data of the system. This would allow maximum flexibility and more useful and detailed analysis as required.

2.6.10. **CDPsmart**[6] is a commercial software package sponsored by the now dissolved East Midlands Regional Assembly to bring consistency to the collection of Planning data across the whole region. The system

[6] http://www.cdproj.com/cdpsmart.htm

is tailor made for planning, web based, and contains a wide range of fields and functions, including the ability to record data on individual completions, and links to GIS for mapping.

2.6.11. The former Regional Assembly purchased the CDPSmart and CDPVision systems for all authorities in the East Midlands. For CDPSmart each local authority now has to find an annual maintenance cost, understood to be less than £1,000 each in most cases. Leicester City Council decided not to adopt the system, but instead uses 'Mastergov' and an Access database.

2.6.12. The county local authorities are implementing CDPSmart at different rates and with varying degrees of enthusiasm and ability. Those most advanced say that they find that CDPSmart has all the functions and capabilities they need, and some are now producing individual property records and maps for completions.

Improving existing stock data

2.6.13. Individual property records would also ultimately be better for existing stock, but this is a much bigger task which would require collecting the data retrospectively and piecemeal. The basis and several building blocks for it are already in place, with GIS systems cleaned and reconciled through the National Land and Property Gazetteer (NLPG[7]), and with virtually all buildings mapped by Ordnance Survey in their Mastermap product.

2.6.14. There are twelve data fields included in Mastermap, mainly metadata, but with scope to increase the number or to link to other data sources through the TOID (topographical identifier). It would take many years to build up the records, but there are sources such as Council Tax records and Valuation Office Agency data that could be used to help populate the database.

[7] http://www.nlpg.org.uk/nlpg/welcome.htm

2.6.15. Other national databases of individual property types are being developed, for example in NROSH[8] for social housing. IT systems are now quite capable of handling this amount of data, and it allows all summary, aggregated and detailed reporting to be carried out much more easily and accurately, provided the base data is good.

2.7. Incomes

2.7.1. Incomes data is available and does not cause a gap in the data, but all sources have their weaknesses. CACI Paycheck has so far been used in the needs model, but possible other sources include Experian, ASHE (the Annual Survey of Hours and Earnings), and ONS modelled income for small areas. Hi4EM purchase CACI Paycheck for the region and make it available as reports or through Business Objects. PayCheck profiles all 1.6 million postcodes in the UK using information on over 4 million households from lifestyle surveys and Census and Market Research data. It is available as a mean, median and mode figure for each postcode, or as a PayCheck type. Household income profiles are available by £5k bands up to £100k+. At this detailed level they provide a picture of the spread of income within a postcode or larger area.

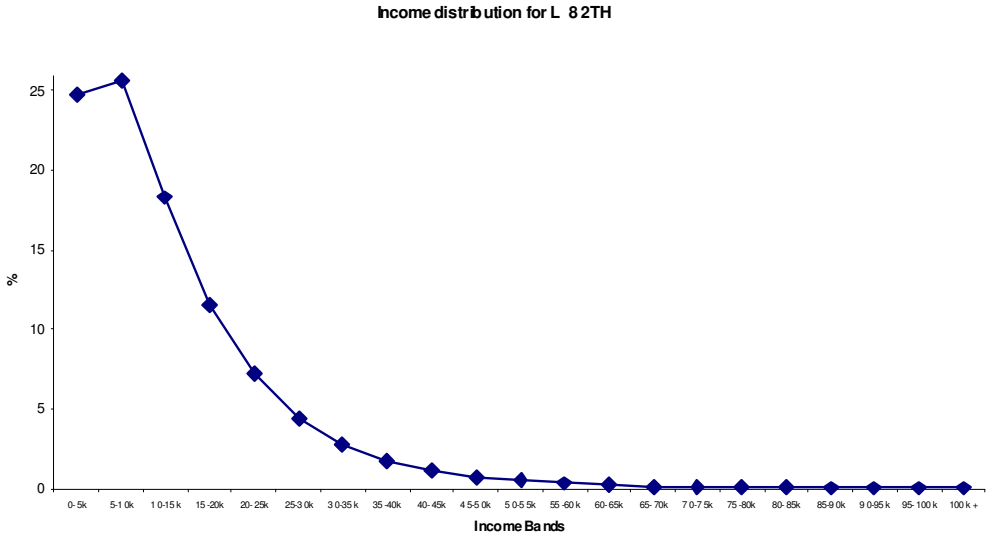
2.7.2. This is ***modelled*** incomes data, essentially based on the principle that incomes follow similar 'log normal' distribution patterns, which vary up or down according to the socio-economic profile of an area.

2.7.3. To demonstrate, the two postcodes profiled below compare household income in one of the poorer postcodes in the UK, to household income in one of the richest. L8 2TH, which lies close to the Toxteth/Princes Park area of Liverpool, has a mean annual household income of £13.2k. Within this postcode, over 50% of households have an income of <£10k pa. It has a thinner profile,

[8] http://www.nrosh.co.uk/

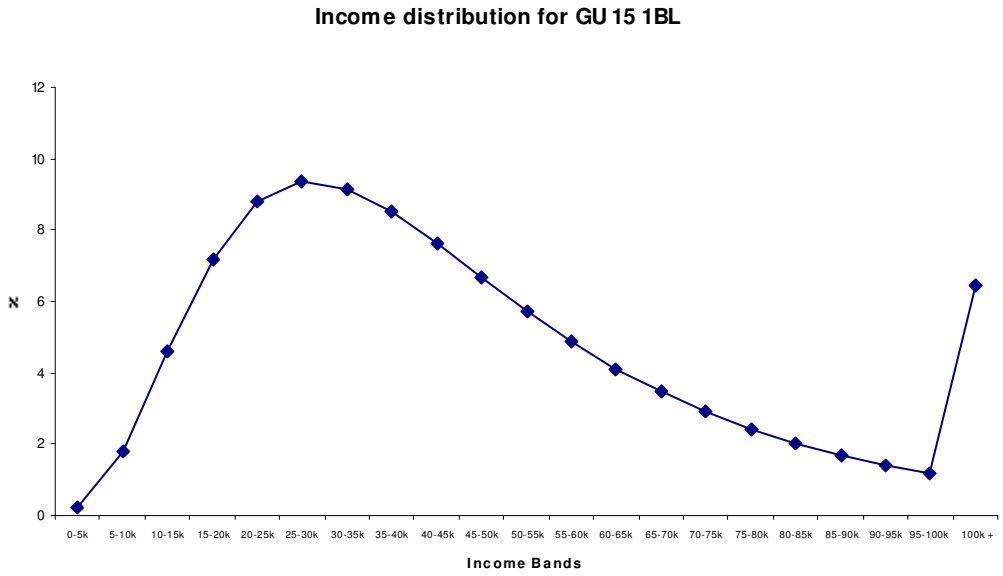
squashed towards lower incomes, but the modelling still assumes that there are some higher incomes in the area.

Figure 6 Low income area profile



2.7.4. Conversely, GU15 1BL, which falls in Camberley, Surrey, has a mean annual household income of £45.9k, with 36% of households having an income of over £50k.

Figure 7 High income area profile



2.7.5. This has a ‘fatter’ profile, inflated towards the higher incomes, but there are still some households on low incomes within the postcode according to the modelling.

2.7.6. Although Paycheck is probably the most comprehensive and detailed source of incomes data available it does have its weaknesses, as do all sources.

- It can be expensive, at typically over £2,000 per local authority if they buy it separately, but again bulk purchase, such as by Hi4EM, achieves considerable savings. Before Hi4EM provided access to the data, Leicestershire County Council used to purchase Paycheck at detailed spatial scales and provided it via LSR-Online for use in the SHMA, but no longer do so. Subscriptions for Paycheck must be continued each year to maintain the right to use the data.
- The assumption of a log normal distribution at all spatial scales is very unlikely to be true in reality, but is necessary for modelling. It results in some odd results like 0.2 of a household with incomes over £100k, but this does not matter for modelling purposes.
- The £5,000 income bands are quite large and insensitive around the point where entry level prices become affordable. This can be addressed by dividing the relevant range into sub sections, most simply by making an assumption that incomes are distributed equally across that range, or with more sophistication by splitting the range according to the section of the log normal profile across it.

2.7.7. Perhaps surprisingly, incomes can often be a relatively less influential factor in the model outputs, especially over recent years, than others such as house prices, backlog need, and levels of supply. They are applied only to newly emerging households, and prices have risen since 2001 to such an extent that large proportions of emergers cannot buy, recently exacerbated by tougher criteria for obtaining mortgages.

3. Updating estimates of need and type/size mix

iv. Outline the resources, systems and expertise required to measure and evaluate fluctuations in the housing market/economy and to make the necessary adjustments to the assessments of the need for affordable housing, including the property types, bedroom sizes and tenures.

3.1.1. Measuring and evaluating fluctuations in the housing market is becoming more possible as detailed data and the systems to handle it become more available. But what is most lacking is a comprehensive understanding and effective model of what is a very complex and inter-related system, in which changes in one part will have profound effects elsewhere, which are very difficult to predict.

3.1.2. So, for example, cuts in Local Housing Allowances could cause an increase in evictions and homelessness, or they could bring about a reduction in private sector rents. Or more probably both. As yet no amount of data will allow how this will work out in practice to be predicted with any confidence, and current understanding of how the whole housing market system interacts is still very primitive.

3.1.3. Looking at any single variable will not capture all the interactions and relationships that affect the system, and yet trying to take every relevant factor into account rapidly becomes totally confused and unintelligible. Human intellectual capacity to understand such complexity becomes a fundamental limiting factor.

3.1.4. The Regional Planning and RSS system were abolished by the new coalition government on 6 July, less than two months after taking office and in accordance with manifesto promises. The Secretary of State said: *"Regional Strategies added unnecessary bureaucracy to the planning system. They were a failure. They were expensive and time-consuming. They alienated people, pitting them against development instead of encouraging people to build in their local area."*

3.1.5. A subsequent letter from the Chief Planning Officer[9] gave some further clarification, notably:-

Local planning authorities will be responsible for establishing the right level of local housing provision in their area, and identifying a long term supply of housing land without the burden of regional housing targets. Some authorities may decide to retain their existing housing targets that were set out in the revoked Regional Strategies. Others may decide to review their housing targets.

3.1.6. Local authorities have since been considering their positions and some have already reduced their targets, while others have kept the RSS figures. The main driver for this currently appears to be the need to have a target against which to assess a five year land supply in case of planning appeals. The Chief Planning Officer's letter says:- ***Do we still have to provide a 5 year land supply****? Yes. Although the overall ambition for housing growth may change, authorities should continue to identify enough viable land in their DPDs to meet that growth. Strategic Housing Market Assessments and Strategic Housing Land Availability Assessments can help with this… Authorities should also have a five year land supply of deliverable sites. This too will need to reflect any changes to the overall local housing ambition.*

3.1.7. The Chief Planning Officers letter is also clear that:- *The examination process will continue to assess the soundness of plans, and Inspectors will test evidence put forward by local authorities and others who make representations.*

3.1.8. The key value of the need and type/size models is that they seek to combine many variables and factors, including behaviour and aspirations, to reflect the whole housing market system, albeit inevitably more simplistically than the actual reality.

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[9] http://www.communities.gov.uk/documents/planningandbuilding/pdf/1631904.pdf

Housing market models

3.1.9. Despite problems with over simplistic answers, the housing market system can be understood and assessed to some extent using the extensive data now available, linked together in models of various kinds. These take key variables and link them together, most commonly in a spreadsheet, to show and automate the relationships between them. Such models can be configured to produce simplistic numerical answers, but these are ultimately less meaningful and useful than seeing trends in the data and understanding the relationships between different factors.

3.1.10. So if entry level house prices rise, but incomes stay the same, fewer households will be able to afford to buy. With inputs for these variables, the relationship can be crudely captured. In reality, however, many other factors also affect it. For example mainly newly forming households require housing, a deposit is required to obtain a mortgage - the amount of which varies in different economic circumstances - and the amount that can be borrowed as a multiplier of income may vary.

3.1.11. A very wide range of factors must be combined to capture as much as possible of the housing market system, but there will inevitably be much simplification and averaging, or the model would become impossibly complicated.

3.1.12. A series of models were developed in the SHMA which have been developed further since, including as part of this project. These include a Bramley affordable housing needs estimates model, and a type/size mix model based on *Household Projections and Current Market Position,* and backlog need based on Housing Registers. These all now include explicit policy options which separate and allow judgements on factors which are essentially matters of policy, not evidence. For example, over what period backlog need should be addressed, or determining the balance between addressing backlog and future need.

3.2. Data sources and selection

3.2.1. For many factors there is no simple, single data source, but a number of indicators must be compared or proxies used, and judgements made about what figures to input.

3.2.2. These factors are then combined together, working through each factor in turn and setting its relationship with the others into a formula.

3.2.3. The resources, systems and expertise required are:-

1. To access, record and track trends from robust data sources which show relevant fluctuations on key input variables for the models. The variables required are set out in the spreadsheet models themselves, and discussed in more detail in the section on input variables below.

   This basically requires staff time and expertise, plus appropriate IT software systems. There are limits to how far it can be outsourced and systematised, and much of the data cannot simply be dropped into the models as it is.

   The software found to be suitable for handling the data required, although others could probably also do the job just as well or better, are standard applications already widely used in local authorities, but not always in Housing Strategy. They include Microsoft Excel, Microsoft Access, a statistical package such as SPSS, and a Geographical Information System. These are discussed in more detail below in the section on *Software applications*.

   While it may be possible to record the data and do most manipulations and transformations in Excel, it is not the best tool for all tasks required, and much greater automation, efficiency and effectiveness can be achieved if other applications are used for some tasks. The key is that once data is in electronic format, usually in a .csv or .xls file, it can be easily transferred between the different applications as required.

2. Skills and expertise in these applications is probably the most difficult to achieve of the requirements for local authorities to fully 'own' the

monitoring and modelling of housing data. There are a number of obstacles:-

a. Data analysis and manipulation to provide an evidence base has increased greatly in importance as part of Housing Strategy over recent years, and it is difficult for staff skill levels to keep up.

b. Visits and interviews revealed a common pattern in many local authorities of having 'data experts' somewhere within the organisation, sometimes as part of the Housing Strategy team, sometimes in Planning or elsewhere, who have developed the skills and, equally as important, have the aptitude to handle and utilise data.

c. Housing Strategy staff also require a range of other skills and have many other responsibilities, such as liaison with other departments, the Homes and Communities Agency, Registered Social Providers, report writing, negotiation, etc. This means that they often cannot maintain their data skills by using them regularly, which these kinds of skills do require. Put simply – they may learn sources, software applications and techniques for analysing data, but if they do not use them for several weeks, they forget. This could be addressed by recording and codifying the techniques, and by automating them within the software for future use.

d. Housing Strategy staff should set up systems to record data and trends in consistent formats. Spreadsheets will do this, but a database system or better still a spatially enabled database or GIS will allow more manipulation and detailed analysis. There should be a common reference number such as a Unique Property Reference Number (UPRN) or National Land and Property Gazetteer (NLPG) reference to enable the linking of data. Longitude/latitude co-ordinates should be recorded if possible.

e. The data should be recorded in its most detailed form, if possible at full address level, as it can be aggregated if necessary, but not always disaggregated. Postcodes area good compromise for strategic

analysis, as they can give enough detail without compromising any confidentiality.

3.3. Input variables, their validity and robustness

3.3.1. The key gaps in data are considered above, and options put forward for filling some of them. The discussion below looks at the variables used in the models, their sources and quality.

Housing needs model

3.3.2. The key input variables for the needs model are:-

3.3.3. Entry level house prices: Lower quartile is used, but NHPAU research suggests that 15th percentile is more appropriate.

3.3.4. Land Registry full address level price paid: Data is now available, and Hi4EM buy this for the whole region each month and put it on their website as spreadsheets for download, (under each local authority name, Land Registry house sales, view reports).

3.3.5. While Land Registry data records the actual price paid for each sale, it nevertheless has some 'health warnings'. For various reasons the price paid can be distorted – for example lower priced sales to relatives, divorce settlements, developers 'deposit paid' incentives and Homebuy schemes. Right to Buy and Part Equity purchases are not supposed to appear in the data, but the details suggest that they sometimes do. Such sales may be 'real', but are not good for working out average and entry level prices. However they are probably few in number in large datasets, and also work in both directions, giving both lower and higher prices than the 'real' value.

3.3.6. Household incomes: Overall averages are not sufficient, and an incomes profile to show the distribution is required. It should be applicable to the lifestage group requiring housing, which in the SHMA Bramley model is emerging households aged under 35. Using this

higher age range now means that the general incomes profile is applicable, whereas for younger age groups incomes are generally lower.

3.3.7. Hi4EM purchase CACI Paycheck data which is on the website as a report for each local authority, or in Business Objects and the GIS system in more detail. The needs model requires an income profile, which Paycheck gives in £5K bands, and to estimate the proportion of emerging households that cannot afford the entry level house price or rent based on this. This is based on the entry level price, less deposit, divided by the income:loan multiplier (typically set at 3.5 times), to give the threshold level household income required to be able to afford market housing. Rent can also be used, typically with a maximum of 30% of household income rent cost – the incomes required to afford these rents being substituted for the income required to buy an entry level property in the model. However this will not take account of the supply flow of private rented properties, or any other barriers such as deposits or references.

3.3.8. Deposits: This is a major data gap, as discussed above, and a 10% deposit is assumed in the model because this is now typically the minimum required to obtain a mortgage. It is fully acknowledged that it is a weakness in the modelling, and a key factor in access to housing in current circumstances. The model is also counterintuitive on this issue because the larger the deposit assumed, the smaller the balance of purchase price left, and hence the lower the income required to borrow that amount; - meaning that more households can in theory afford to buy and need reduces, whereas in reality lack of deposits will increase need. However the component in the model that takes account of mortgage rationing will balance this out to some extent.

3.3.9. Under 35 emerging households unable to afford: The number of households expected to emerge can be estimated by using the household projections, as the total number of households under 35 at some future date – for example 2021, less the number of households

projected to already exist ten years earlier, in 2011, when they were ten years younger. This is set out in the table below.

Figure 8 Deriving estimate for households under 35 – extract from household projections

Under 35 households projected to exist in 2011	age band			
Household Type Name	15 to 19	20 to 24	25 to 29	30 to 34
One person household	70	851	1,915	1,479
Other multi-person household	26	1,405	457	81
Unconcealed cohabiting couple household	41	963	2,558	1,605
Unconcealed lone parent household	79	424	645	655
Unconcealed married couple household	2	113	962	1,745
Under 35 households projected to exist in 2021				
Household Type Name	15 to 19	20 to 24	25 to 29	30 to 34
One person household	59	778	2,014	2,629
Other multi-person household	17	1,347	485	79
Unconcealed cohabiting couple household	35	870	2,575	2,481
Unconcealed lone parent household	76	397	724	1,004
Unconcealed married couple household	2	92	884	2,285
Under 35 households projected to emerge in the ten years 2011 to 2021	All new households		Households in 2021 less households ten years younger in 2011	
	15 to 19	20 to 24	25 to 29	30 to 34
One person household	59	778	1,944	1,778
Other multi-person household	17	1,347	459	-1,326*
Unconcealed cohabiting couple household	35	870	2,534	1,518
Unconcealed lone parent household	76	397	645	580
Unconcealed married couple household	2	92	882	2,172
Total emerging household over ten year period	14,859	/ 10 years		
Average annual newly emerging households	1,486			

Source: CLG trend 2006 based projections

*A negative number appears in the total of Other multi-person households projected to emerge because this example is for a University area, and most student multi person households that exist at age 20 to 24 have gone by the time they reach age 30 to 34. This means that the student total, most of whom will not be in need of long term housing, adjusts itself.

3.3.10. Household projections: The estimates of emerging households therefore also depend on the validity and robustness of the household projections, as do the future type and size mix requirements. Detailed household projection data, such as the example in the table above, is only provided on request by CLG. Warnings are given about the robustness of the projections at district level, and the published data gives only very broad figures.

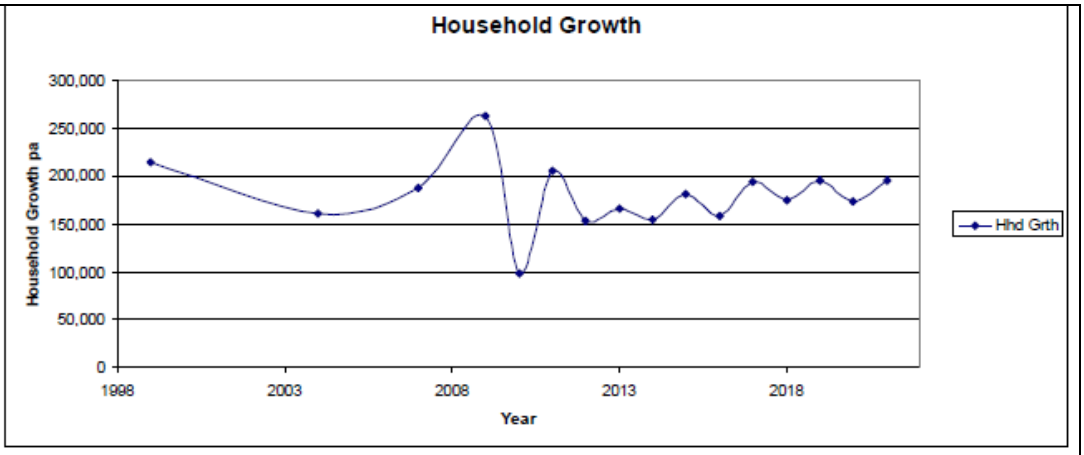
3.3.11. Further information on how they are produced is at:- http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/householdestimates/notesdefinitions/

3.3.12. Projections are based on past trends and behaviour patterns, which will give reasonable indications if they continue in the same way. However, this may not be so, and it introduces a circularity which will not necessarily be true, and is not always desirable. For example, the number of single person households has been increasing for many years, as more people live alone through never forming a long term relationship, divorce and relationship breakdown, or loss of partner in old age. This may not continue indefinitely along the same trend if behaviour changes, or life expectancy increases slow.

3.3.13. The methodology to be used for the 2008 based projections (discussed further below) has been improved, and tested. While these tests used some real data, the results may still change in the final versions. Nonetheless, a comparison with the 2006 based projections suggests a small fall in the number of households projected in the 2008 based ones. This is also indicated by the new logistic regression based CLG Bramley housing outcomes model[10] 2010, which attempts to take account of economic factors in household emergence and formation.

[10] http://housingstatisticsnetwork.co.uk/pdf-files/Glen.Bramley.HSN.Hsg.Nds.10.10.06

Figure 9 Bramley Housing Outcomes Model 2010 – Household Growth



Over the whole period 2002-2021, household growth averages 174,000 p.a. which is clearly well below official projection levels, but is the same as the feasible growth suggested by net dwelling additions (174,000). The forecast rates of *new household formation*, reflecting factors of income growth, affordability, social lets and other factors, are generally rather above the 500,000 p.a. level, but depressed somewhat in certain years (2007-10).

3.3.14. The projections may also be 'controlled' to another figure such as number of dwellings available, when it is assumed that the total of households will not differ markedly from the number of dwellings available to house them.

3.3.15. An ability to afford calculation must be applied to the estimated annual number of emerging households using a threshold formula. This is shown below in an example.

3.3.16. If the entry level house price is £100,000, and a deposit of 10% is assumed, then a mortgage of £90,000 is required to afford to buy.

3.3.17. At a loan:income multiplier of 3.5 times , the household income required to obtain this loan is £90,000/3.5 = £25,714.

3.3.18. Households with incomes above this level are assumed to be able to afford, while those below it cannot afford to buy (but they may still be able to afford to rent, depending on rent levels and the proportion of income it takes to be deemed able to afford).

3.3.19. This is set up in the model as a formula, so that if the entry level price or incomes profile changes the new data can be pasted in and

adjustments to the numbers unable to afford will be made automatically. The £5,000 income bands are quite large, and hence insensitive at around the point where ability to afford switches to unable to afford, which, not surprisingly, is around, or just above, where a large proportion of household incomes fall in the distribution.

3.3.20. Backlog need: Can be estimated from housing registers. This a readily available proxy, but it has a number of drawbacks. Some of these are set out in the SHMA guidance on estimating housing need.

Partnerships need a good understanding of the scale of current housing need, including any backlog, at the local authority level. However, it can be difficult to obtain a complete and robust estimate of backlog due to data limitations. Traditionally, local surveys have been used although these can be costly to administer and difficult to interpret. Housing registers (when well maintained and shared amongst providers) are informative but unlikely to be comprehensive since some households in need may not register and some on the register may not be classified as in need….

Partnerships should calculate a range of estimates for backlog, with the data sources that are most robust providing a minimum level estimate. Where backlog is a particular issue, partnerships may wish to use additional methods and sources to develop these estimates. Partnerships, working with regional bodies, should aim to ensure that the definition of component categories is applied consistently across the region as far as is possible.

3.3.21. Spicker (1989), drawing on earlier work by Bradshaw (1972a, and 1972b), distinguished between four kinds of need:-

• Normative Needs: These are based on 'expert' judgements, typically based on policies within bureaucratic 'gatekeeping' organisations, and in relation to social housing allocations include overcrowding and standards of unfitness of property.

• Comparative Needs: These are based on judgements by professionals as to the relative needs of different households. The housing register queue is an example of this type of approach. It often involves balancing of competing

pressures in more front line or ‘street level’ bureaucratic processes, which interpret and apply normative policies.

• Expressed Needs: This can be defined as ‘what people say they want’. It can be argued that the opportunity for households to express preferences for a particular area when they apply for entry onto the housing register is an example of this type of need.

• Felt Needs: A household, for example, may feel that they would like to express a desire for a property in a specific locality (such as within the catchment area of a certain school), but that housing register preference areas do not have regard to these boundaries. It is therefore a felt rather than an expressed need.

3.3.22. Different sources can be interpreted as broadly reflecting different concepts and hence measures of ‘need’:-

- surveys = ‘felt’ need,
- housing registers = ‘expressed’ need,
- local authority allocations policies and perceptions = ‘normative’ or ‘bureaucratically assessed’ need.

3.3.23. Housing registers are clearly a form of ‘expressed need’, and as such, it can be argued, better reflect the type of need that affordable housing provision ought to meet, because if households do not actually apply for affordable housing they probably have better prospects of meeting their housing requirements themselves. They also reflect the policies of that specific local authority on priorities and admission to the register. Surveys, which are also expensive, are necessarily snapshots of respondents current circumstances, and generally show much higher levels of backlog need.

3.3.24. That not everyone who might be considered ‘in need’ requires or wants affordable housing is further supported by research findings in Housing Corporation research ‘Planning for the Future’ (2008).

It is interesting that 85% of non home-owning households in this survey with incomes of under £25,000 had not applied for social housing. This is surprising, given that there are very few areas of the country where this sort of income is sufficient to purchase a home on the basis of a mortgage alone. Yet aspirations to own a home are by far the most commonly cited reason for not applying for social housing.

3.3.25. Despite acknowledged problems, it can be argued that Housing Registers do therefore give a fair indication of the most relevant type of backlog need for needs estimates. However, they could be improved if local authorities work with the application processes and data to extract more useful strategic intelligence from it. Opportunities for making improvements have arisen through the development of Choice Based Lettings and Common Housing Registers and the changes in systems and software required.

Choice based lettings and common housing registers

3.3.26. Leicester City Council already has, and all the County local authorities are about to implement, Choice Based Lettings schemes in 2010. However they are not combined, so that residents in the city cannot choose to move out of it, and vice versa. Of itself the CBL systems will not necessarily help to meet any more housing need, but the introduction of new systems does allow an opportunity for standardisation, better interaction, and closer joint working to help improve data quality and utilisation from the Housing Register and lettings systems.

3.3.27. Owner occupiers falling into need: This factor represents needs not counted elsewhere from owners who, for example, are repossessed due to mortgage arrears. The proportion falling into need in this way is very small, typically less than 0.4%, but the number of owner occupiers is quite large , so it becomes a not insignificant figure. The rate of mortgage repossessions can be obtained from the Ministry of Justice statistics.
http://www.justice.gov.uk/publications/mortgatelandlordpossession.htm

3.3.28. The number of owner occupiers is taken from the Census, adjusted if possible by any additional sales since. The Census allows a further refinement because it differentiates between owned outright and buying with a mortgage, so that the repossession rate can be applied only to those with mortgages.

3.3.29. In migration additional need: Issues with migration data are discussed in the section on gaps and weaknesses above. Migration projections are usually included in the underlying population projections for household projections anyway, and no separate migrant household input should usually be required in the models, except perhaps where there may be unusually high flows not likely to be captured in the projections.

3.3.30. Supply of affordable housing – lettings by the local authority and housing associations, and intermediate sales and lets.

3.3.31. Issues with supply side data are also discussed in the section on gaps and weaknesses above. In addition there are also adjustments to be made to take off transfers and exchanges, which are not lets to households which will have been counted as in need because they were already in social housing, and because housing register totals should exclude transfer applicants where such 'internal' needs would be shown.

3.3.32. However figures for transfers are again not always easy to determine. Internal lettings systems can give good indications, and CORE data, if available, can be analysed to give RSL transfers.

3.3.33. Household projections are also a key input to the type and size models. These are discussed above in relation to their role in the needs model.

Review of household projections methodology

3.3.34. The methodology for the projections has also recently been reviewed, and changes proposed, consulted on, and tested http://www.communities.gov.uk/publications/housing/consultationhouseholdprojection

http://www.communities.gov.uk/publications/housing/testingchangeshousehold

3.3.35. These will change the household classifications from the current typology based mainly on marital status to one based on household type, and including estimates of the number of children. The table below is an extract from the test results.

Figure 10 Methodological changes to the household projections

Testing methodological changes to the household projection model

Table 5: Stage 2 results, England

Type		2001	2006	2011	2031	2006-2031 p.a.
One person households	Male	2,678	3,113	3,565	5,279	87
	Female	3,626	3,937	4,292	5,826	76
One family and no others	Couple: No dependent children	5,434	5,764	6,153	7,488	69
	Couple: 1 dependent child	1,265	1,229	1,242	1,271	2
	Couple: 2 dependent children	1,702	1,611	1,539	1,415	-8
	Couple: 3+ dependent children	750	730	712	727	0
	Lone parent: 1 dependent child	592	687	803	1,206	21
	Lone parent: 2 dependent children	398	442	494	705	11
	Lone parent: 3+ dependent children	185	204	229	334	5
A couple and one or more other adults	No dependent children	1,532	1,404	1,297	978	-17
	1 dependent child	460	399	368	296	-4
	2 dependent children	200	189	186	185	0
	3+ dependent children	98	100	105	129	1
Lone parent and one or more other adults	1 dependent child	162	172	188	244	3
	2 dependent children	67	76	86	129	2
	3+ dependent children	34	40	47	75	1
Other households		1,341	1,321	1,319	1,305	-1
Total		20,523	21,417	22,624	27,593	247

Source: Communities and Local Government

3.3.36. Broken down by age bands this should allow a better understanding of the types and sizes of households projected to exist at different points in time and thus allow better planning for the mix of housing required, at least in principle.

3.3.37. The models have been updated to give new needs and type/size estimates on the currently available data. These will be available as spreadsheets for each local authority.

3.3.38. The new projections should allow further refinement of the models, especially to take account of households which are families with children better. The models will need to be amended to take them into account, but quite how this can be done is not possible until they are available.

3.4. Housing type and size mix model

3.4.1. The type and size mix model was developed as part of the Leicester&shire and other SHMAs, through a long process of analysing and interpreting the data and projections, feedback from local authorities, and gradual development of a better understanding of how housing markets work.

3.4.2. The key to this is understanding it as a *housing market system*, in which relatively slowly changing 'stocks' of dwellings are occupied for different periods by comparatively faster 'flows' of households of various sizes, with widely varying purchasing power, and of different ages and circumstances, or 'lifestages'. Overlaid on this are strong 'place' factors related on one dimension to general factors such as quality of environment, employment, and culture; and on another dimension to household specific 'pulls' such as family, friends and community.

3.4.3. These complex influences must be unpicked and separated to make them intelligible, but not to such an extent that crucial factors and relationships are lost. While different levels of purchasing power affect ability to access housing, it is less critical in remaining in it once obtained – essentially because of UK house price inflation, and high initial costs which decline, and (with mortgages) eventually disappear, over time.

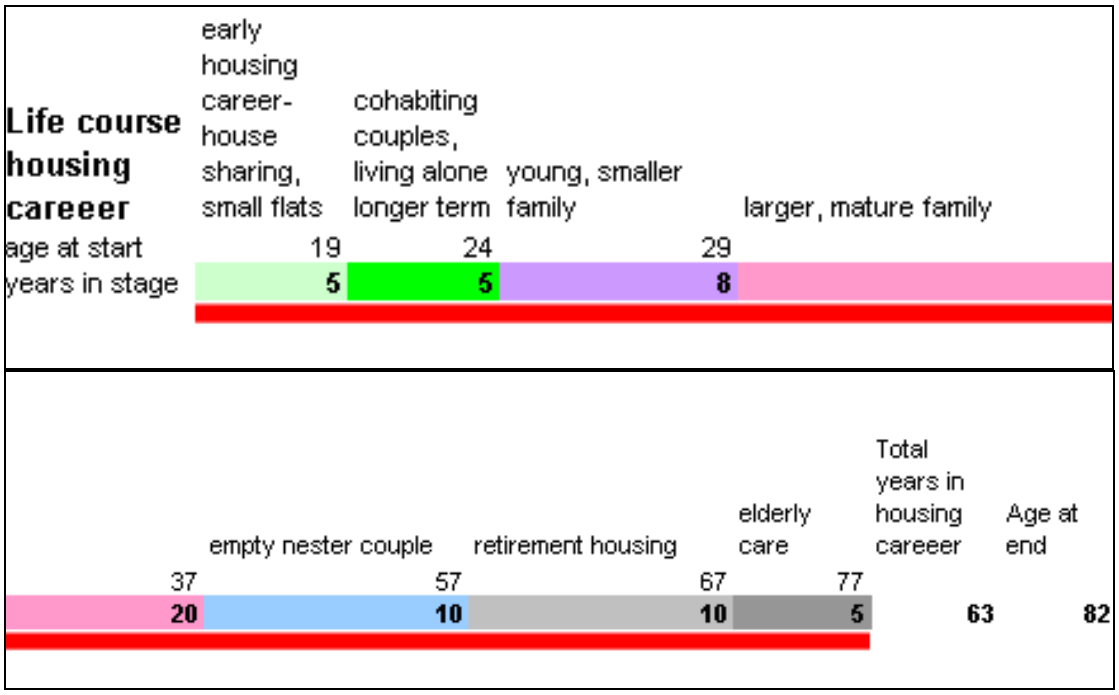
3.4.4. Nevertheless the model will inevitably be simplistic to some extent, and will never capture all the complicated and subtle inter-relationships and effects within housing market systems. The household projections are only one part of a wide variety of factors that affect the amount, types, sizes and locations of housing required to meet future demand and need. Land availability, its ownership, national and local economic circumstances, internal and international migrations, environmental restrictions and concerns and Planning politics are just a few of the many other factors that have an influence. The 'credit crunch' has also shown that lack of controls on lending resulting in large amounts of money trying to buy too few homes has affected prices and housing consumption patterns.

Future need - Lifestages

3.4.5. A key factor for type and size is 'lifestage', that is the different phases or periods in the course of a typical - but not all - UK resident's life:- young singles tend to live share accommodation, couples are more likely to live in flats, families with children live in family houses, older people live in bungalows or ground floor flats, and so on. This in very broad terms is the main influence on the type and size of housing that households are most likely to want, and in time to get to occupy, in that lifestage period.

3.4.6. This can be illustrated in a housing 'timeline' or 'pathway', shown below, which shows very roughly different housing requirements and situations at different lifestages.

Figure 11 Housing timeline



3.4.7. This represents the common scenario that the length of time spent in different types and sizes of housing varies considerably, typically with the longest period required for the mature family. This is also the largest type of dwelling which remains broadly suitable into subsequent lifestages, and indeed often the focus of great emotional attachment.

3.4.8. The type and size mix model therefore seeks to apply these general lifestage categories to the detailed, disaggregated household projections, to look at not only what households need, but also what they want, and are most likely to live in now. This has further implications for what they can afford, because within the UK housing market system, housing is not only a place to live, but also, if owned, a substantial capital resource.

3.4.9. An example set of detailed household projections for a local authority by household type and age are shown below.

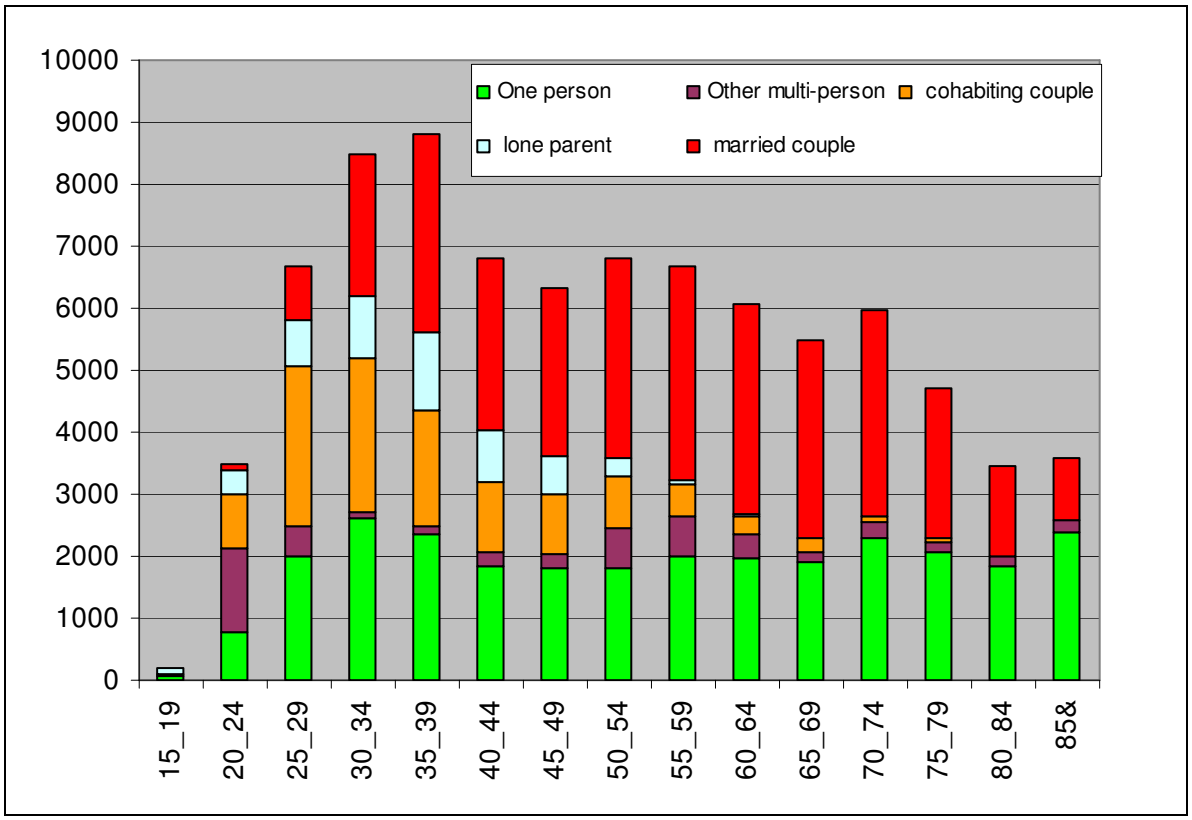
Figure 12 Detailed, disaggregated household projections

Household Type	One person	Other multi-person	cohabiting couple	lone parent	married couple
Total of type 2021	27,800	5,100	12,000	5,300	33,400
Age band 15_19	60	20	40	80	5
20_24	780	1,350	870	400	90
25_29	2,010	490	2,580	720	880
30_34	2,630	80	2,480	1,000	2,290
35_39	2,360	130	1,870	1,240	3,210
40_44	1,830	230	1,130	830	2,780
45_49	1,810	220	960	620	2,710
50_54	1,820	620	860	300	3,210
55_59	2,020	630	510	60	3,470
60_64	1,960	400	290	20	3,380
65_69	1,900	180	220	10	3,160
70_74	2,300	260	90	10	3,320
75_79	2,050	170	70	5	2,440
80_84	1,830	170	10	10	1,450
85&	2,400	180	5	10	1,000

Source: CLG 2006 based household projections. NB. Figures have been rounded but still have a spurious accuracy because of how they are generated, and proportions are much more relevant than numbers

3.4.10. A chart helps to visualise the different circumstances and changes that occur as household move through different lifestages.

Figure 13 Household projections – profile by age and household type



3.4.11. This shows how the mix of types of household changes with age and lifestage, from:

- A mix of mainly singles, multi person sharers and cohabiting couples at age 20-24, to
- a majority of couples (either married or cohabiting) from age 25 right up to 70+, always with a number of singles - but probably not always the same people throughout, and then
- a majority of single person households aged over 75-79 as partners die.

3.4.12. The types and sizes of homes that these households will generally want and need can be implied from various sources of data on what they typically occupy, or from housing registers, or indeed from general observation and experience. This is necessarily approximate and generalised, but can give an overall indication of the types and sizes of home to fit each lifestage and household type, but

also the likely current distribution of types and sizes based on typical housing histories. A possible matrix of types and sizes of home for different lifestages and ages is shown in the table below.

Figure 14 Lifestages and most suitable/likely accommodation type

General accommodation type	Suitable and affordable for, and acceptable to	Typical housing 'career' stage
1 bed flats	Mainly younger single or couple households at the start of housing pathway.	1
2 bed upsizing flats	Childless couples or older singles	2
2 bed houses	Couples, smaller families, single parents, singles with child access and frequent visitors	2 and/or 3
3 bed houses & larger	Typical families with children	2, 3, 4
3 bed flats/clusters. Shared housing	Young people/students sharing at start of housing career, students, extended older families, non traditional household groups	1, 5, etc
2 bed downsizing houses, flats, bungalows	Younger old empty nesters, downsizers	5
1 /2 bed elderly/care	Older frail elderly singles	6

3.4.13. As a very crude generalisation, households will usually gravitate towards higher levels of housing consumption if they can, within limits;- so they will prefer a house to a flat, and a larger home to a smaller one. Looking at the housing choices of the very wealthy is strong evidence for this. It is generally other factors, such as cost, location or difficulty of upkeep that push them towards 'less desirable' properties in a complex and personal round of trade-offs and compromises. This inevitably poses many issues for local authorities as gatekeepers and allocators of scarce resources.

3.4.14. This matrix can then be applied to the disaggregated household projections to attribute a typical type and size of housing to each age and household type 'lifestage', by combining the matrix of typical sizes with the household projections. This has been semi automated so that the table of projections can be copied and pasted into the model and

the relevant sizes are derived from them by 'looking up' preset size required values based on the lifestages and most suitable/likely accommodation type table above.

3.4.15. This typically gives an output showing substantial needs for downsizing properties, due to the large and increasing numbers of older empty nester households.

Figure 15 Typical outcomes of basic type and size model based on forward projections

1 bed flats	8%
2 bed upsizing flats	7%
2 bed houses	19%
3 bed houses & larger	34%
3 bed flats/cluster	2%
2 bed downsizing houses/ flats/bungalows	21%
1 /2 bed elderly/care*	9%

*NB. Elderly care schemes are often not within the remit of local housing authorities, but of social services and the private sector

3.4.16. However it should also take account of their likely current housing circumstances within typical housing histories over the 'life course', and their likely behaviour. It leads to serious mistakes to assume that smaller households will live in, or move to, smaller accommodation. The model therefore includes a variable to allow the proportion of under-occupying empty nesters to be altered from the 100% assumed in the basic type/size attributed to that age/household type cell within the projections matrix to a lesser figure, because not all of them will downsize.

3.4.17. What this lesser figure should be is very difficult to decide. Various sources can give some indications, but none ask quite the right questions to get the numbers downsizing. The Survey of English Housing does not ask for the age of movers but does record economic status, which includes a retired category. This shows that in 2005/6[11] some 135,000 retired households, around 8% of all moves, had

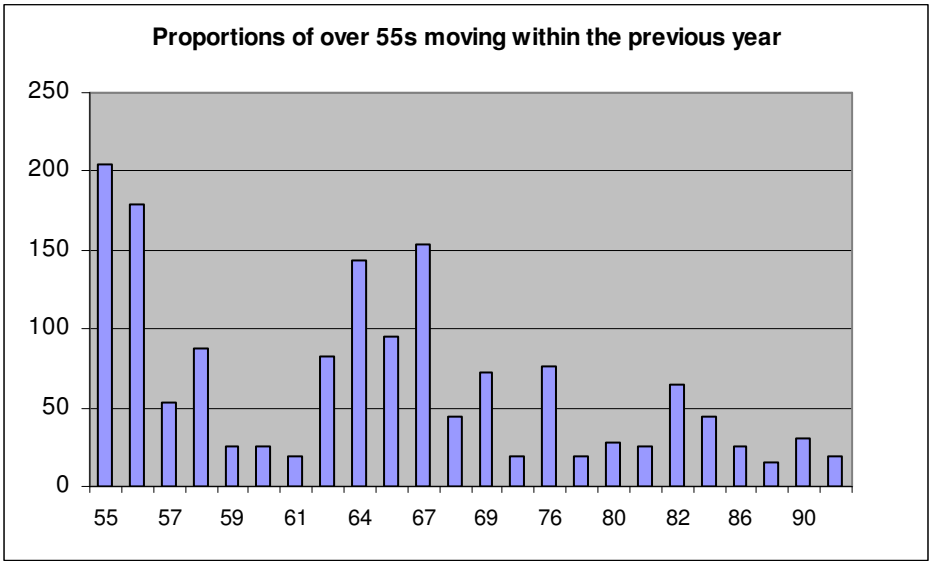
[11] The Survey of English Housing became the English Housing Survey after 2007/8. Fieldwork and similar detailed tables are not yet available for the later surveys.

moved within the previous year, which is about 2.5% of all households over retirement age. This needs to be treated with caution, however, for several reasons:-

- some moves will not be downsizing, but between similar sized properties, either family housing or different types of housing for older people
- some of this group will be moving abroad, or into residential care, so will not require downsizing alternatives
- the SEH does not allow downsizing movers prior to retirement to be identified
- this is an annual rate, which will be cumulative, so that over 10 years ostensibly 25% of the older/retired group will have moved

3.4.18. Another source is analysis of housing needs survey data. No recent Leicestershire surveys are available, but the 2002 Leicester City housing needs survey shows that some 2.8% of households with 'adult 1' aged over 60 years old had moved within the previous year, which equates to 28% over ten years. For over 55s, the figure is higher at 34%, with households much more likely to move between 55 and 60, just before retirement, than later.

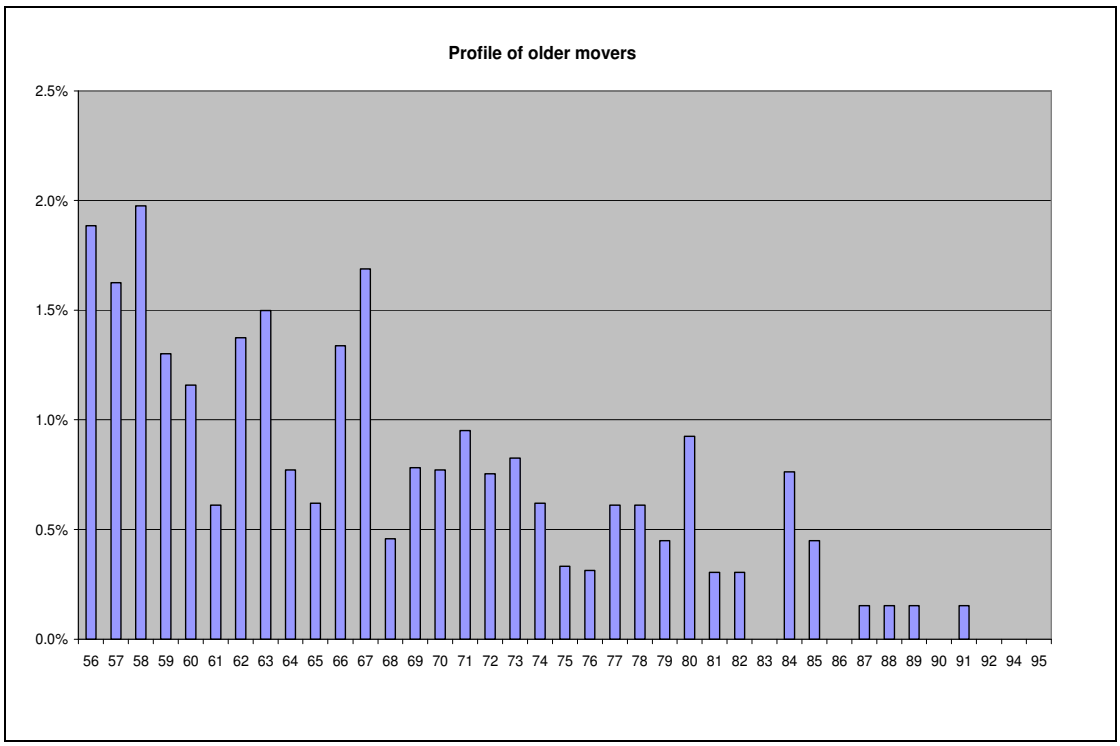
Figure 16 Proportions of over 55s moving within the previous year



Source: Leicester City Council housing needs survey 2002

3.4.19. A more recent 2007 Derbyshire survey also shows that about 19% of those aged over 60 had moved at least once within the last ten years. It also allows the pre-retirement moves to be identified, and shows that the rate of moving is higher just before age 60, and then declines erratically until few move at aged 80+, although of course there are fewer surviving.

Figure 17 Profile of older movers



Source: South Derbyshire housing needs survey 2007

3.4.20. These sources suggest that a reasonable rate for downsizing moves would be about 20% over a ten year period. This modifies the requirements substantially and dramatically reduces the amount of 'downsizing' housing required. In effect it accepts that many more empty nesters will continue to under-occupy.

Figure 18 Typical outcomes of type and size model based on forward projections

1 bed flats	8%
2 bed upsizing flats	7%
2 bed houses	19%
3 bed houses & larger	51%
3 bed flats/cluster	2%
2 bed downsizing houses/ flats/bungalows	4%
1 /2 bed elderly/care	9%

20% proportion downsizing factor applied * NB. Elderly care schemes are often not within the remit of local housing authorities, but of social services and the private sector

3.4.21. However, historical data cannot give a reliable estimate because how many households will move depends on future behaviour, which may be different to the past. It may be influenced by many complex factors, such as the general economic environment, retirement ages and pensions, provision of suitable options in local housing markets, house prices and differentials, personal and family circumstances, etc, etc. A planning objective of policy and provision may also be to seek to promote better utilisation of housing stock, in which case a greater proportion of downsizing housing would help to meet that potential demand, bring down prices for it, and make downsizing at around retirement age a more normal part of typical housing careers .

3.4.22. But as well as empty nester households, increases in affluence have also meant that many other households in general have been able to afford to 'consume' more housing – some 60% of three bedroom houses have no children in them, as do 52% of all houses with three or more bedrooms[12]. About a quarter of homes with 3 bedrooms or more are lived in by pensioners, which are not necessarily, but are more likely to be one or two person households, and the main use given for 23% of spare bedrooms is 'for when grandchildren visit' - the second most common reason after 'storage' at 26%. These entirely normal behaviour patterns should be taken

[12] Source: British Household Panel Survey 1991-2009

into account when estimating the sizes of housing required to meet future demand.

3.4.23. It is also important to realise that the results of the modelling should in principle apply to the whole of the housing stock within that local housing market system, so that it will better fit the requirements of the overall mix of household types, sizes and lifestages. It is of course impossible to affect the whole stock more than a small amount - new development is usually no more than 1% of total stock each year, and often much less. So the results can only mean that the mix of types and sizes in new developments should gradually 'nudge' the overall market towards the optimum shape.

3.4.24. The vagaries of the market and human behaviour are also very likely to intervene in any such crude and simplistic model, so it is also vital that the local housing market system is monitored and understood, and if progress towards a more optimum fit between homes and households is not working, perhaps for example if empty nester household do not downsize in the numbers estimated, then plans should be altered and adjusted. Planning needs to become more locally responsive and flexible, and based on evidence and trends which are as up to date as possible within the lead-in time frames under which it all operates. The models are merely decision and policy support systems to assist with understanding and distilling complex relationships and interactions, and can never by themselves give definitive answers.

Backlog need

3.4.25. The above addresses the future requirements aspect of the type and size mix required for the whole of market and some social housing, but for social housing there is also a 'backlog' element of households already in need, which is incorporated into the model in a separate strand. This is a difficult component to estimate, firstly because there are several ways of 'defining' it, and secondly because it is difficult to 'measure' empirically.

Defining and estimating backlog housing need

3.4.26. Different concepts of need are discussed in the section on the needs model above. They are often at odds, both on a personal communication and understanding level – for example when Housing Officers talk to applicants – and when estimating the extent of need. In the past, housing needs surveys were used to try to find need, but these were found to be costly to administer and difficult to interpret, and also not surprisingly tend to elicit more 'felt' needs.

3.4.27. The most readily available source of backlog needs data is local authority housing registers. Notwithstanding various problems discussed in relation to the needs model above, it is clearly a measure of expressed need of some sort. While fully aware of these issues, the housing register is used as an indicator of this expressed need, and in particular because applicants express - or are allocated by policy – the type and size of property which they 'need'.

3.4.28. Whether the type/size is chosen by the applicant or allocated according to policy is a relevant point, which is not always distinguishable within housing register data. There may be a difference between what the applicant wants, and may subjectively consider that they 'need', and what policy says they will be eligible for. In liaison with the Choice Based Lettings project it was suggested that a question should be included on the application form to ask for household's 'ideal' preference of area, unmediated by what is likely to become available. Type and size required could be derived from the recorded household composition. This would then give a more unbiased view of what people want, not just what they can get, and when compared with actual bids and lets should give a more comprehensive view of demand and need.

3.4.29. The housing register data can be used to give a breakdown of the types and sizes required. For example:-

Figure 19 Typical types and sizes required from housing register analysis

Property Type	1 Bed	2 Bed	3 Bed	4 Bed	Total
Bedsit	246	1			247
Bungalow	210	7	1		218
Flat – Ground Floor	232	20	1		253
Flat – Non Ground Floor	455	47	1		503
House	9	613	226	15	863
Maisonette		3			3
Total	1,160	696	232	16	2,104

3.4.30. This data is not always easy to extract initially, but participant local authorities have found that once they have set up the queries they can be easily rerun whenever required.

3.4.31. The data does also eventually appear, in more limited form, in the CLG Housing Strategy Statistical Appendix (HSSA) returns.

Figure 20 HSSA returns on sizes required

Local Authority	Households requiring 1 bedroom	Households requiring 2 bedrooms	Households requiring 3 bedrooms	Households requiring more than 3 bedrooms	unspecified number of bedrooms
Blaby	605	341	126	24	0
Charnwood	1,041	247	670	57	0
Harborough	0	0	0	0	1,882
Hinckley&Bosworth	672	293	169	21	0
Leicester	3,240	1,650	1,335	392	0
Melton	588	266	132	9	14
NW_Leics	201	196	302	24	0
Oadby&Wigston	399	327	142	10	1

Source: CLG interforms August 27 2010

3.4.32. Gaps appear for Harborough because they have a Choice Based Lettings (CBL) system, and applicants can in principle bid for any size they wish - but will only be eligible subject to policy, single people will not get large family houses, for example. While with CBL selection takes place at bidding stage, it is very helpful for the strategic housing evidence base to ask for this information on the application form, or to derive a size and type from the household composition.

This has been requested as a function in the Abritas system for CBL for the districts.

3.4.33. Neither does information in this form give what is required to derive an appropriate type and size mix. There is a key distinction between younger households on the 'upward steps' of the housing ladder requiring one and two bedrooms, and older households who have had their families on the 'downsizing' ladder; the housing they want and require is quite different. The data extracted from local authority systems is therefore better for this purpose.

3.4.34. For this reason, the data in this format, or indeed even as it often comes out of LA systems, does not directly match with the categories used in the forward based projections of 'upsizing' and 'downsizing', which essentially reflect key 'lifestage' differences for what are similarly sized households, that is singles and couples.

3.4.35. For the model there is therefore a step required to convert one format to the other. This is a relatively simple process of attributing, for example, bungalows and flats for older people to 'downsizing' accommodation, one and two bedroom general need flats to 'upsizing', and two, three or more bedroom houses to 'family housing'. Distinctions for some categories are not clear cut, or hard and fast, and different lifestages can clearly happily live in similar types and sizes - such as flats - although perhaps sometimes less happily in the same blocks. But the different 'ends' of the 'lifestage' spectrum are generally clearly distinguishable in terms of some 'housing products' required, and for future planning it is helpful to differentiate.

Housing Register expressions of need and actual demand over time

3.4.36. Housing registers are, however, severely limited and distorted in what they show about the type and size mix of housing needed for the future, if taken at face value. This is clearly shown in the HSSA housing register figures, where requirements for one beds are typically, but not always, around half the total requirement.

Figure 21 HSSA returns – sizes required by housing register applicants

Local Authority	All households on housing register	1. Households requiring 1 bedroom	2. Households requiring 2 bedrooms	3. Households requiring 3 bedrooms	4. Households requiring more than 3 bedrooms	5. unspecified number of bedrooms
Blaby	1,096	55%	31%	11%	2%	0%
Charnwood	2,015	52%	12%	33%	3%	0%
Harborough	1,882	0%	0%	0%	0%	100%
Hinckley/Bosworth	1,155	58%	25%	15%	2%	0%
Leicester	6,617	49%	25%	20%	6%	0%
Melton	1,009	58%	26%	13%	1%	1%
NWLeicestershire	723	28%	27%	42%	3%	0%
Oadby/Wigston	879	45%	37%	16%	1%	0%

3.4.37. The average is around 44%, but North West Leicestershire has much lower figures, and Harborough has no data. Enquiries of NWL staff have shown that theirs is due to a probably transitory increase in supply to meet the needs of applicants for smaller properties, partly from more new social housing lets as a result of switching of shared ownership and market housing, but also because of the great success of the 'Available Property' scheme, which links applicants with empty private rented properties[13]. Harborough, with its CBL system, has no data at all on 'in principle' choices, because applicants choose this when they bid.

3.4.38. Even so, the implied requirement which could be taken simplistically from these figures that almost half of social stock should be one bedroom is patently wrong based on the experience of local authorities themselves.

3.4.39. Here the concept of lifestages and housing timelines is again very relevant. Many in the lifestage of seeking to leave their parental home and so applying for one bedroom accommodation may well only require it for a few years. This is reflected in the higher turnover levels of one bedroom homes, particularly general needs flats for younger, pre-retired people, which also means that more of this need is met

[13] http://www.nwleics.gov.uk/pages/available_property

from relets, and the crude figures would most certainly not be what is required to meet need more widely.

3.4.40. The model therefore uses the timeline figure above to adjust the stock required to meet each lifestage element of need, to take into account the period of time that each stock type is needed in typical housing careers. So for example if the occupancy period for a one bed flat is five years, this is just 8% of a total housing career timeline of perhaps 60+ years. Conversely the period of time spent in family housing is typically 25 years or more, over 40% of the total housing career. This virtually reverses the proportions on the housing register, and brings into the model a factor to reflect different supply rates of different types and sizes of housing.

3.4.41. These adjustments currently inevitably require judgments and assumptions about what each lifestage occupancy period should be. It may be possible to use turnover data to estimate it more accurately, but these will also be affected by stock shortages and policy limitations, as with much administrative housing data, and will not reflect actual demand and need.

3.4.42. Local authorities also report that a significant proportion of 'churn' of one bedroom flats is due to tenancy failure, rather than lifestage shift. This will increase apparent supply flow more, but this will still not meet longer term housing need, either within that young lifestage for some, for various reasons, or at the transition to another. Modelling this would require more specific data on turnover, and increased complexity, but may be possible.

3.4.43. The adjusted alternative proportions required based on the housing timeline can then be applied to the actual housing register figures, to give a derived figure which still reflects the numbers of each type/size on the housing register but modified to reflect how long each lifestage is likely to be in that form of housing.

3.5. Policy options in the model

3.5.1. The processes and arguments set out above give rise to a number of data input judgements and policy options for the model. These are:-

- Alternative household projections can be used for both the needs and type/size models, and these may be affected by general economic and housing market conditions.
- The proportion of under-occupying 'empty nesters' who will downsize over the coming period of typically ten years, creating a demand for suitable properties and releasing family housing for occupation by families.
- For the social housing type and size mix, what weight is given to forward projections as against backlog need, and
- For backlog need as estimated by housing registers, what weight is given to the types/sizes required as shown by unadjusted numbers of applicants; or conversely what weight is given to the housing timeline of different time periods of occupation of accommodation types and sizes during different lifestages.

3.5.2. These can be informed by evidence and data, but in the end are also judgements based on the direction policy aims to nudge the housing market system. For example if more owner occupied downsizing housing is provided this should, based on simple economic theory, result in its price falling, and more empty nester households moving into it. However if it is not good value, quality and saleable to this demographic group, in their strong market position they will stay put and it could result in higher numbers of that type remaining empty.

3.5.3. Similarly, if more one bedroom social rented general need flats are provided, based on emphasising crude backlog need figures, this could meet more need, or it could result in higher levels of 'churning' in those properties, and overcrowding as larger properties for them to move into as they change lifestage are not available.

3.5.4. The application of policy judgments in the models is set up as simple entry of percentages to weight each variable factor. The input figures will depend on a combination of data plus knowledge and experience of trends and relative pressures. These should not be too short term, as this will miss what will happen in the medium and longer term and store up problems for the future. Nor should they be too long term, or immediate pressures will increase.

3.5.5. Being explicit in the model does at least allow theoretical experimentation and adjustment to possible changing circumstances; but the delivery time for housing is so long that making adjustments based on real feedback of the effect of different types of new supply will take many years. Use of the models may also lead to new data sources being found or developed to inform these policy judgment inputs, but this will take time and conscious reviewing and searching.

3.5.6. In current housing market system circumstances, the safest option would appear pretty clearly to be provision of more family houses, but this is also the most resource and land use intensive.

4. Assessing the SHMA affordability model

4.1.1. The brief asks the project to:-

Assess the existing SHMA affordability model in the light of recent changes in the housing market/economy, including the impact of the economic downturn on first-time buyers, the changing demand for Low Cost Home Ownership and changing migration patterns.

4.1.2. All models have their limitations and can never capture all the interactions and implications within complex housing market systems. They can only ever be rough approximations based on the available and economically obtainable evidence, linked together as well as possible based on a sound understanding of how the system operates.

4.1.3. One of the greatest dangers is that they are given too much credence, and particularly that they can produce a single , 'right', numerical 'answer' – in this case the number of additional affordable homes required. Nevertheless modelling and estimating need can bring many benefits beyond this limited and simplistic objective.

- It can help improve understanding of how the housing market system works by thinking through and linking in a model the interactions between different components and variables. In many ways this is the most important aspect of the whole exercise.
- In doing so it helps raise the right questions of gaps in data, its validity, and how it should be linked.
- It raises questions about specific data inputs where very often judgments and decisions on what figures to use must be made. Data is seldom unequivocal and without qualification of some sort, and sometimes heroic assumptions have to be made.
- It allows rapid scenario modelling and production of test results, to quickly see whether they are sensible and meaningful.
- It raises political aspects of needs assessment, because implicit judgments within policy or data selection are highlighted. This can

result in some fundamental questions – for example the role of the private rented sector in meeting, or indeed causing, housing need.

4.1.4. Models of this kind are also never finished and finalised, but will undergo constant development and occasional wholesale review and change. One of the problems is that they therefore become more complicated and difficult to follow.

4.1.5. The SHMA model can be assessed on different levels.

1. The whole question of the validity of modelling such complex systems can be examined.
2. The particular model used – essentially based on the 'Bramley' model – can be looked at closely and compared to other possible models.
3. The inputs, relationships and interactions within the specific model used can be critically considered.

These are considered in turn below.

Housing models in general

4.1.6. Modelling systems is well established in many disciplines, especially in 'harder' and more technical areas such as engineering, and comes under the general heading of System Dynamics[14]. 'Softer' systems such as biological, ecological, or especially human behaviour based social/economic systems, exactly such as housing markets, are usually much more difficult to model, because the interactions are less predictable, controllable, and change - inconsistently - as behaviour changes, often in response, and counter to, the predictions of the model.

4.1.7. 'Unintended consequences' are rife in such systems, and - history appears to show - especially in housing. A prime example is

[14] http://en.wikipedia.org/wiki/System_dynamics

the concentration of deprivation in social housing, often linked to the 'moral hazard' of welfare benefits and the 'residualisation' effects of the Right to Buy. Arguably better models of how the housing market system works might conceivably have allowed prediction and perhaps avoidance of such adverse consequences, but this is probably a vain hope in the face of political ideology.

4.1.8. Housing is also much more affected by the spatial dimension and scale at which it operates, which directly affects how it can be modelled. Housing markets operate at many different levels – the national UK 'housing market' is a constant source of news and debate, but housing markets can also be considered as operating in city regions, or Housing Market/Travel to Work areas; within settlements of various sizes such as cities, towns or villages; and within this choices are made at local housing submarket, neighbourhood, street or individual property level. Each of these may require different forms of modelling, and different sources and aggregations of data, giving different results.

4.1.9. One obvious problem with different scales of analysis is related to moves and migrations – both international and internal. Larger scales may miss these - especially internal flows - while smaller scales have difficulty tracking them and their effects. The number of migrations in a single year may be quite small, but the cumulative net effect over time can have a substantial impact on demand, prices and needs.

Alternative models

4.1.10. Many models have been developed and tried, many implicit within local studies and often not transparent, some effectively 'black box', models where the transition between inputs and outputs is very difficult to determine.

4.1.11. The CLG Guidance (2007) includes a chapter on estimating need, but when examined closely and tried out in detail for real it becomes clear that it is not really a 'model' as such, but more a

collection of factors that influence levels of need, and the guidance provides for varying ways of fulfilling the general framework rather than a model as such. This is because it does not fully take into account interactions, overlaps, double counting and feedback mechanisms which are required for a genuine model of the housing market system. The EMRA/Hi4EM needs estimates follow the method outlined in the CLG Strategic Housing Market Assessments Practice Guidance, and produces substantially higher levels of need than the SHMA model.

Figure 22 EMRA needs estimates 2009

	Total net annual housing need	Total net need using 2nd estimate of unsuitable housed households	Total net need using 3rd estimate of unsuitable housed households	RSS new supply 2010	lowest need estimate	lowest % need
Blaby	590	502	512	380	502	132%
Charnwood	932	947	1,080	790	932	118%
Harborough	726	677	678	350	677	194%
Hinckley and Bosworth	791	741	810	450	741	165%
Leicester UA	1,393	1,393	1,393	1,280	1,393	109%
Melton	249	187	203	170	187	110%
North West Leicestershire	337	385	409	510	337	66%
Oadby and Wigston	296	265	302	90	265	294%

Source: Hi4EM – extracted from tab *All steps in guide* 2009

http://www.hi4em.org.uk/EastMidlands/MapsAndReports/housingmarkets.htm

4.1.12. Whitehead and Kleinman (1992) identify different basic models for attempting to assess housing need, the main ones being net stock, gross flows, and mixed models. Net stock models look at net changes in the balance between housing stock and households, subdivided between tenures and 'assistance' in these sectors. It is in essence a more static model. Gross flows models look at how households move

through the housing stock from initial emergence as new households as a flow, while the stock changes with additions and demolitions. The gross flows approach is generally seen as technically superior, but can be more difficult to apply, and more volatile.

4.1.13. In 2008 CLG commissioned a *project for the development of a model that will allow the Department to produce estimates of "Housing Need",* from Professor Glen Bramley of Heriot-Watt University, who in a 'scoping paper'[15] considers a number of options and previous attempts at larger scale assessment. These are:-

- Holmans' Net Stock Model
- the Cambridge Department of Applied Economics Model
- Bramley Partial Gross Flows Affordability Model, and
- ORS Net Stock/Affordability Greater London Housing Requirements Study.

4.1.14. The new CLG project was completed over a year later than anticipated, apparently due to technical difficulties. In it different modelling approaches may be used to derive different elements, possibly entailing a mixture of aggregated, micro and longitudinal data, and it would be valuable to compare different approaches where feasible.

4.1.15. From another perspective, housing markets are seen as so complex that they are best modelled at an individual household/dwelling level of interactions using what are known as 'Agent Based Models'. Progress has been made with this on a number of fronts, but generally outside the policy based planning and housing need related context and more from micro-econometrics and technical ABM disciplines. Examples are:-

http://cress.soc.surrey.ac.uk/housingmarket/ukhm.html

http://gisagents.blogspot.com/2008/04/fine-scale-modelling-of-london-housing.html

[15] http://www.york.ac.uk/inst/chp/HAS/Paper%204%20-%20Housing%20need.pdf

4.1.16. In the longer term this may become a more fruitful way of trying to understand and predict these complex systems.

4.2. Assessment of Leicester&shire SHMA model - the Bramley needs model

4.2.1. The Leicester&shire SHMA used a version of the Bramley model, adapted to use the available local data.

4.2.2. The Bramley model is relatively simple as such models go, and can be set out in stages and a flow chart. Bramley himself describes it in his 2007 scoping paper:-

> The model may be characterized as a partial gross flows model entailing the following elements:
>
> • Estimation of local income distribution patterns for households disaggregated by size/type, economic activity, and broad age
>
> • Comparison with local threshold price levels (e.g. lower quartile, by size) to determine percent of each group able to afford to buy (or other intermediate options); in recent studies, an adjustment to affordability is made to allow for likelihood of access to significant capital for deposits;
>
> • Estimation of local gross new household formation rates from Census age headship relationships, and application of affordability rates to these to generate newly arising affordable need;
>
> • Additional allowance for migrants, originally based on net flow and affordability, now based on proxied incomes of in - and out - migrants (Census, by occupation) and marginal affordability rates;
>
> • Allowance for older owner occupiers moving to social renting based on national rates observed in SEH (Survey of English Housing)
>
> • Calculation of 'backlog' based on combination of (a) large scale survey measures of incidence of problems such as overcrowding, sharing, unsuitable or unaffordable accommodation, (b) Census proxy measures for these, and (c) local waiting list levels and/or changes, with application of policy determined quota to this to bring into annual need flow
>
> • Sum of four elements of gross need compared with supply from social sector net relets (plus, in principle, LCHO resales), with relets based on recent actuals but possibility of econometric forecasting model coefficients to use for future forecasting/projection

Source: SCOPING NOTE ON APPROACHES TO ESTIMATING HOUSING NEED 2007

4.2.3. An earlier exemplification sets out the model in simpler form with some generalised figures included:-

Bramley model
The basic model for estimating affordable housing need is.
Net Need (units per year) =
Gross Household Formation x % <35 unable to buy (adjusted 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 of backlog to be housed per year, (e.g. 10% over 10 years, 20% over 5 years) x waiting list 'backlog' above need threshold
- net relets of social rented housing

Source: Bath & North East Somerset housing needs assessment technical appendices 2004.

4.2.4. Many of its weaknesses are considered in relation to data gaps and limitations. In the wider sense of a model trying to capture the interactions and implications of the housing market system as a whole, the biggest failings are:-

- It does not take adequate account of the private rented sector. While the model can assess affordability based on private rent levels, it does not include that Housing Benefit can make the PRS 'affordable' - this is specifically excluded in CLG Guidance; it does not take account of the obstacles to access of deposits and rent in advance, and other widely perceived downsides of private renting such as high rents which do not build up any equity stake or capital, lack of long term security, and restrictions on personalising a home.
- The household projections can have many variations, but do not currently take account of economic or housing market conditions, but rather reflect past trends which may change.
- Entry level prices set at the lower quartile are considered to be too high in research by the NHPAU in 2009, who produce evidence that the 15th percentile should be used instead. For example net need in one local authority at the lower quartile price of £117,000 comes out at 318, and

at the 15th percentile of £103,000 is 239, a reduction of 79 or 25%, with all other inputs held constant. But it does also depend on how the different prices relate to the income bands.

- Incomes data is only modelled, although real data, such as from surveys, also has many problems. It also does not take account of other costs and outgoings.
- Resources from other sources that help mainly younger households to buy a home are difficult to estimate. Various research has estimated that the proportion of young households who receive assistance with deposits from parents may be up to 80% (Council of Mortgage Lenders[16], 2010), up from 38% in 2005.
- The proportion unable to obtain a mortgage varies considerably with the state of the market and financial institutions' policies. Too much easy lending is as damaging as too little, as the credit crunch clearly showed.
- Local Authority Housing Registers have many problems as proxy indicators of backlog need, but other methods such as surveys, prevalence rates and extrapolated data from other sources are equally questionable. The best solution would seem to be to work to improve the quality and coverage of 'housing registers' in a wider sense, perhaps by separating some form of registration as interested in assistance and advice with housing from what is now seen primarily as application for social rented housing.
- Owners falling into need has to be based on historical data, while it is really future trends that can radically affect the number, as occurred in the 1990's. Many owners falling into need often in practice find ways to meet their housing need - returning to parents, private renting, etc - but this is not to say that it is not a genuine need when it occurs.
- The supply side of lets and low cost sales can be very variable, especially in smaller authorities or in specific submarkets or villages,

[16] http://www.telegraph.co.uk/finance/personalfinance/7967974/Eight-out-of-10-first-time-buyers-get-deposit-from-parents.html

and estimating the actual figures to use requires close analysis of data patterns and trends, and judgement about how to treat it. This is the reality of supply, where a new scheme can relieve pressure of backlog need, which will then begin to build up again – often faster because people see that some new housing has become available.

4.2.5. The history of attempts to develop models to estimate the number 'in housing need' would appear to provide evidence that it is very difficult, if not impossible. The main reason for wanting such numbers has also generally been to provide figures for centralised or regionalised plan making, and to justify resource allocation from central government, or appropriation through S106 Planning Gain processes.

General points and summary

4.2.6. Over and above these specific issues, an underlying major problem is that models are largely based on historical data and trends, while it is the future that they try to predict. This is common to all social policy, of course, but in housing, more than other areas, behaviours change - by both consumers and producers - in response to market changes, and then feed back in to create further change. Examples include boom and bust cycles, the growth of buy to let, city flats, residualisation of social housing by Right to Buy, concentration of deprivation, and many more. This can make it tempting to despair of trying to understand and model the market, but unfettered markets work even less well. If interventions in housing market systems are to be made, as is inevitable, it is worth trying to do so with some care.

4.2.7. Although the situation is unclear, the apparent rejection of much of the centralised planning process and moves towards localism by the Coalition Government in 2010 may render the 'objective' 'number in need' for local authority areas practically meaningless. In this new world local assessment and trade offs against other community benefits and compromises are intended to become the basis for the

mix of housing, and local communities may favour mid range market and intermediate housing more than social renting.

4.2.8. Although considered by many to be a high risk policy, a more localised approach and decisions, coupled with better data and ways of handling it, could in time lead to new, more sophisticated, dispersed and detailed ways of understanding and modelling housing markets.

5. The impact of the economic downturn on first-time buyers, changing demand for Low Cost Home Ownership and changing migration patterns

5.1.1. The impact of the credit crunch and economic downturn has been discussed at several points in looking at the details of the needs model. There is abundant evidence, both populist and academic, that it has become harder to buy a home due to mortgage rationing, despite some house price falls. However this is inconsistent, with some property types, locations and some sections of society affected more than others, and an increasingly volatile housing market.

5.1.2. Flats have fallen in sale value by much more than average, especially where there is over-supply in central locations, as have many ex-Right to Buy properties, while family houses in more desirable areas have held their value much better. Young adult children of owner occupiers have been able to take advantage of the changed market with parental help for deposits, as evidenced above, while those from families without those resources have been further disadvantaged; exacerbating polarisation and inequality.

5.1.3. A major casualty of these changes has also been Low Cost Home Ownership (LCHO) such as shared ownership, with sales faltering considerably. It has been also widely acknowledged that the funding model which allowed shared ownership sales to cross subsidise social housing 'is broken'. According to CORE data, the number of sales in Leicestershire in 2006/7 was 154.

Figure 23 RSL low cost home ownership sales 2006/7

	Shared Ownership	Any other shared ownership	Right to Acquire - RTA	Other Sale	Home Ownership - long term disabilities	New build HomeBuy	Open market HomeBuy	Total
Leicester	17	1	2	1	0	0	3	58
Blaby	6	2	0	0	0	0	1	9
Charnwood	22	9	0	0	1	0	5	37
Harborough	22	5	0	0	0	0	0	27
Hinckley & Bosworth	2	0	0	0	0	0	1	3
Melton	2	0	0	0	0	0	0	2
North West Leics	9	0	0	0	0	2	1	12
Oadby & Wigston	5	0	0	0	0	0	1	6
Total	85	17	2	1	1	2	12	154

Source: CORE

5.1.4. In 2009/10 it was half this, at 76

Figure 24 RSL low cost home ownership sales 2009/10

2009-10	Shared Ownership	New build HomeBuy	Open market HomeBuy	Total
Leicester	9	1	2	12
Blaby	2	1	1	4
Charnwood	7	0	2	9
Harborough	9	2	2	13
Hinckley & Bosworth	2	0	2	4
Melton	19	0	0	19
North West Leics	1	0	0	1
Oadby & Wigston	9	0	5	14
Total	58	4	14	76

Source: CORE

5.1.5. CORE data also shows that not only has the number of sales fallen, but the equity stake purchased has dropped from 48% in 2006/7 to 31% in 2009/10.

Figure 25 RSL sales equity stakes purchased 2006/7

2006/7	Initial equity stake purchased								
Property location	25%	40%	50%	60%	65%	70%	75%	80%	Total
Leicester	0	2	15	0	0	0	1	0	18
Blaby	0	0	8	0	0	0	0	0	8
Charnwood	2	5	23	0	1	0	1	0	32
Harborough	5	3	16	1	0	2	0	0	27
Hinckley & Bosworth	0	0	2	0	0	0	0	0	2
Melton	0	0	1	0	0	0	0	1	2
North West Leics	5	1	3	0	0	0	2	0	11
Oadby & Wigston	0	0	5	0	0	0	0	0	5
Total	12	11	73	1	1	2	4	1	105

Source: CORE

Figure 26 RSL sales equity stakes purchased 2009/10

2009/10	Initial equity stake purchased				
Property location	25%	30%	35%	50%	Total
Leicester	4	1	0	5	10
Blaby	3	0	0	0	3
Charnwood	6	0	0	1	7
Harborough	8	0	0	3	11
Hinckley & Bosworth	2	0	0	0	2
Melton	15	2	0	2	19
North West Leics	0	0	0	1	1
Oadby & Wigston	6	0	1	2	9
Total	44	3	1	14	62

Source: CORE

5.1.6. Part of the problem has been that lenders became less willing to lend on LCHO schemes, and/or interest rates and fees for these non mainline housing products increased. This was at least in part based on previous impressions by some lenders that some LCHO was 'sub prime' – especially for smaller equity shares, as some households sought to become owners when they could barely afford it. There are a number of different types of scheme, which have also changed quite

frequently, which is often considered to be confusing[17], both for buyers and lenders.

5.1.7. This all caused something of a crisis, and many schemes for sale were converted to rent, with the support of the Homes and Communities Agency (HCA). This produced a temporary increase in the number of new social rented properties becoming available, but also took substantial HCA funding, and in time led to a downturn in the number of shared ownership homes being developed. The overall market remains small, at considerably less than 1% of stock. Debate over the value and appeal of LCHO and other versions of 'Intermediate Housing' has continued, and prompted a number of investigations and research studies, both local and national.

5.1.8. A study[18] for the East Midlands in 2008, although before the full impact of the credit crunch, concluded that: *such schemes have a place in the Regional housing market in enabling access to home ownership, but that some of the practical outcomes might be at variance with the policy intentions.* It found that of almost 10,500 enquiries made in the two years of the scheme at that time just 2% went on to complete a purchase, although this is of course partly determined by supply. The applicants most likely to go through to completion were private renters (35%), those living with family and friends (40%), and people earning £15-£30K a year (60%), with 90% on less than £30K. While two thirds of enquiries were from first time buyers, only 20% of purchases were from this group. The proportion of successful buyers who were previously social renters was 9 -13%.

5.1.9. From national studies the most specific to the question in the brief is a 2009 Housing Studies Association Paper *Changes in the Low*

[17] http://cfg.homesandcommunities.co.uk/housing-for-sale

[18] http://www.emregionalstrategy.co.uk/write//Low-Cost-Home-Ownership-March2008.pdf

Cost Home Ownership market in the credit crunch and recession in England[19]*.* It concludes that:-

- *The dynamics of the LCHO sector of the housing market are extremely variable across regions; localities and even streets.*
- *Shared ownership is still working relatively well in higher valued areas in regions where longer term prospects are thought to be good and is less successful in lower value areas.*
- *There is greater competition between HAs and the developers of market housing.*
- *Problems with respect to mortgage availability, valuation and down payment remain the most pressing.*
- *LCHO is not more affordable than before the downturn, as even though house prices have fallen, tightened lending has not improved affordability.*
- *LCHO is unlikely to become the hoped for step-on from social housing.*

5.1.10. Other less guarded commentators have been more forthright about the shortcomings of Shared Ownership:- "the whole product is geared towards filling up HA's bank accounts more than anything… It's not a social housing product, it's an extremely poor commercial product."[20]

5.1.11. *"Greater competition between HAs and the developers of market housing"* has developed because many commercial developers have sought to use their own versions of Shared Ownership to promote their own products by making them appear more affordable. This usually takes the form of selling an initial equity stake, typically 70-75% in the Leicestershire area, and deferring the purchase of the remaining equity for a period, typically up to ten years. However the

[19] http://www.york.ac.uk/inst/chp/hsa/papers/spring09/Burgess.doc

[20] http://www.insidehousing.co.uk/news/finance/shared-ownership-lease-seeks-to-reassure-lenders/6508363.article

total repayment sum reflects the remaining percentage of the market value of the property at time of sale or valuation, which means that if house prices fall purchasers could be faced with paying a price higher than the property is actually worth in a few years time, resulting in contractual negative equity.

5.1.12. The number of Shared Ownership properties that remain unsold has been tracked by the Tenant Services Authority (TSA) since 2008, and was 4,598 in July 2010, down from over 10,000 in early 2009. This probably hides much regional variation, but a figure cannot be ascertained locally without getting data from housing associations who operate LCHO, who can be reluctant to provide it, because the time to sell is not available from CORE data until after the property is sold.

5.1.13. Perhaps in response to all this, in summer 2010 a group of twenty one housing associations formed a "Promoting Shared Ownership" group [21]. They argue that Shared Ownership plays a number of important roles:

- it boosts asset ownership and helps people achieve their home ownership aspirations
- it meets serious housing needs, allowing couples to move out of parental homes, single people to move out of friends' homes, overcrowded households to get the space they need, and so on
- it reduces reliance on the severely rationed social rented housing stock
- it frees up social homes as social tenants are prioritised for purchases
- it helps create more mixed and socially and economically balanced communities
- it helps government to develop thousands of extra affordable homes each year.

[21] http://www.shared-owner.co.uk

5.1.14. Weighing these competing perspectives is complicated, and unlikely to give clear cut answers on LCHO. What they do appear to show is that there is no one single answer, market dynamics vary considerably, and that tenure is just one aspect of the overall LCHO 'product'. Buyers, even 'part buyers', need more commitment and will be more discerning than renters who can relinquish their tenancies and walk away. The whole range of factors for a potential long term home will therefore come into play, - type, size, location, quality, price, and tenure, each with a whole range of sub factors and influences, both general and personal.

5.1.15. Some tentative general findings are possible. RSLs and Local Authorities consistently report that flats and apartments are harder to sell than houses. Shared Ownership in less desirable area sells less well. Shared Ownership does not work well if there are competitively priced properties for outright purchase nearby. The HSA paper comments that:-

differences were linked to very local scale area characteristics and the nature of the developments. There were differences in sales rates for similar units even down to postcode level.

5.1.16. This confirms that if Shared Ownership is to work better, each product and scheme needs to be assessed on its own merits within its specific local housing market context. This can be done using detailed data now available.

5.1.17. This has all prompted consideration of other forms of intermediate housing. The decline in Shared Ownership sales led to a number of schemes being switched not only to social rented but also to 'try before you buy', or rent now, buy later'. These were designed to utilise the properties and prevent them staying empty, and also to give the selling RSL a 'breathing space'. Initial review of this by the HCA suggests that few renters have gone on to buy as yet.

5.1.18. Other ideas have been developed for more 'Intermediate Rent', which is on a long term but not permanent form of tenancy, at higher

rents than social renting, aimed at middle income households who are able to rent privately and so unlikely to be eligible for social renting, but cannot afford to buy. The Chartered Institute of Housing has termed these 'the Inbetweens' in its discussion document *Widening the rental housing market* [22].

5.1.19. This form of tenure could also move away to some extent from the 'worst first' approach to housing need, towards 'greatest benefit for the greatest number'. This could also be linked with a less long term tenancy, linked to planning and assistance to eventually buy a home, with structured help with financial management advice, deposits, and loans, in a more 'Save to Buy rental' approach. Research by Hometrack suggests that many households who were allocated social rented housing could actually afford Intermediate Rent[23] .

5.1.20. Another angle on the debate is that Shared Ownership could have the potential to reduce the risks of homeownership (Whitehead, 2010[24]) and allow more households to become owner-occupiers in a sustainable manner, by sharing risk, improving the resale market, and smoothing out house price volatility.

5.1.21. These changes could also bring housing association Intermediate Housing into more direct competition with both Private Renting, and Developers' Shared Ownership products. The relationships between these different sectors is complex and changing. The needs model can be set to assess affordability based on entry thresholds to different tenures – for example it can use 70% of the full entry level price, or an Intermediate or Private Sector rent, to estimate what proportion of households can and cannot afford to 'buy' at this level. The example below shows how this can be estimated.

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[22] http://www.cih.org/news/view.php?id=1285

[23] http://www.insidehousing.co.uk//6509797.article

[24] http://www.jrf.org.uk/publications/shared-ownership-shared-equity

Figure 27 Estimating proportion able in principle to afford Intermediate Housing

Example - proportion able to afford Intermediate Housing	Full entry level	IH entry level (less deposits)
Entry level price	£100,000	£70,000
Cannot afford to buy	60%	45%
Annual number of emergers	1,000	
Unable to afford either Social or Intermediate Housing	600	(60% x 1,000)
Able to afford IH	150	(60% - 45% = 15% x 1,000)
Proportion requiring affordable that could in principle afford IH	25%	= 150 / 600

5.1.22. However this is merely a data driven, numerical estimate of what proportion could in broad principle afford housing costs higher than social renting, but lower than buying. It does not take account of a whole range of factors that influence which form of Intermediate Housing households would consider appropriate for them, or actually take up.

5.1.23. CORE data clearly shows that the target group for Intermediate Housing are largely those who would otherwise be in private rented housing, yet there is typically no clear explicit political judgement, centrally or locally, as to whether the PRS is an acceptable long term solution to 'housing need', and if so for which groups, in what circumstances, and at what quality and price. If the PRS is a solution, then LCHO is not required to meet this element of need. It may fulfil some other function – such as 'helping young households to get a foot on the ladder', but this brings in factors other than 'pure' housing need.

5.1.24. The mix of LCHO has generally been set by quasi technical estimates of who could afford it, such as in the SHMA or the example above; or by top down pressures from the Homes & Communities Agency aiming to achieve more units by stretching grant funding through Shared Ownership. There seldom appears to be much local discussion input into the tenure mix, either from the local authority at a political level, or from the local community. A more thorough

investigation and consideration of the role of different housing tenures and products by local authorities at Member and Community level, as part of a new, more localist approach, could help clarify some of the issues around LCHO and renting.

5.1.25. The financial aspects of different products and tenures also need to be considered. While Shared Ownership provides a capital input for the selling RSL, albeit only a proportion of the full cost, Intermediate Rent requires the full costs to be supported by rental stream income, and may require other resources to make it viable for the provider, such as Social Housing Grant, reduced price land, Section 106 contributions, or funding from the RSL or local authority. Examples show how this depends on capital costs, interest rates, rent levels and management costs.

Figure 28 Example 1 – Intermediate rental financing

Capital cost	£120,000
Interest rate	3.9%
Initial rental yield	5.0%
Rental income - annual	£6,000
Rent per month	£500
Save to buy' rental discount	£ -
Rent realised	£500
Management cost %	4.0%
Management costs/month	£20.00
Residual rent to cover mortgage	£480.00
Mortgage covered by rental	£102,097
Initial shortfall	£17,903

Figure 29 Example 2 – Intermediate rental financing

Capital cost	£140,000
Interest rate	6.0%
Initial rental yield	4.3%
Rental income - annual	£6,000
Rent per month	£500
Rent realised	£500
Management cost %	2.0%
Management costs/month	£10.00
Residual rent to cover mortgage	£490.00
Mortgage covered by rental	£82,224
Initial shortfall	£57,776

5.1.26. The rent must remain comparable with respect to the Private Rented Sector for the product to be competitive. At £40,000 the difference in the funding gap on the different input assumptions would clearly make or break the scheme. The long term viability of the scheme will also then depend on variations in interest rates, actual management costs, and rent inflation levels. As for any house buyer, the shortfall can be considered as the deposit, and mortgage costs will fall over time as a proportion as inflation increases income, unless interest rates rise.

6. Housing market monitoring

Establish a rolling system, which monitors the housing market and the local and national economy on a quarterly basis

6.1.1. The housing market is now recognised as having a strong influence in the wider economy and societal interactions in many ways, such as by absorbing excessive lending, affecting mobility, exaggerating inequalities and increasing polarisation.

6.1.2. The project considered various factors and indicators as candidates for inclusion in a monitoring system. This is influenced by a variety of factors, which include:-

- What can be measured and data obtained for fairly readily? What effort & resources are involved in compiling this data?
- Is the effort of collection of that item worth the impact possible? How often should each variable be collected and compiled?
- Over what time periods is change or trend significant?
- When should rolling averages be used to show trends?
- How to decide what degree of change is significant - are there tipping points?
- How could these be determined from evidence?
- What will affect factors LAs can do anything about? What is the point of monitoring those they can't?
- What will affect factors LAs do have responsibility for, and will this tend to distort behaviour in certain directions?
- How will this affect how local authorities respond and act?

6.1.3. A list of preferred candidates was drawn up for testing. Those for which data could be obtained and which gave some useful indication of the housing market, or part of it, were taken forward for

further consideration. Some additional data was requested– for example Council Tax data on Single Person Discounts in Band C or larger properties as an indicator of under-occupation levels. The table below shows the list taken forward.

Figure 30 Possible monitoring variables

Variables agreed to be tested for monitoring	Data sources	To obtain data	Period for significance	Tipping point
House prices	Land Registry via HI4EM	Hi4EM then LA in panel on right - Land Registry house sales - View reports	Depends on housing market: Suggest quarterly	Increase takes prices beyond key income level - mode, average, etc
House price change	Derived from above time series		Quarterly	
Number of properties sold	Land Registry via Hi4EM		Quarterly	
Incomes	CACI Paycheck via Hi4EM		Annual	
Mortgage availability	CML - derived	Council of Mortgage Lenders	Annual	
Deposits required	CML - derived	Council of Mortgage Lenders	Annual	
Private rent levels	Various - Find a Property, Rent service	findaproperty	Annual	Rents for 2 bed house exceeds 30% (?) of mean household income
Number of HB claims -	LA HB sections	HB requested	Quarterly	
Number of applicants on	Internal systems		Quarterly	
Mortgage repossessions	Courts data	Department of Justice stats	Quarterly	
Number of voids - private	Council Tax systems	Ctax requested	Quarterly	Private sector voids increasing, exceed 5%?
Under-occupation	Council Tax	Ctax requested	Quarterly	
Supply of affordable	Housing Strategy	Housing Strategy	Quarterly	
Supply of affordable housing - Relets	Internal systems, CORE	Lettings systems	Quarterly	

6.1.4. The next question is how to present this data. As with much strategic housing analysis and interpretation, and indeed socio-

economic data in general[25], reports on paper are a poor way of displaying such data, and there are now many other methods.

6.1.5. Government has promoted methods of visualisation[26] to help improve how local government handles and present large amounts of data, and Leicestershire County Council has also developed expertise in ways of presenting complex data through dashboards and similar.

6.1.6. As well as more traditional tables, charts, graphs and maps, methods of visualisations such as parallel co-ordinate plots, treemaps, and cartogram maps are now used to present complex data in more intelligible forms.

6.1.7. Good visualisation can help users explore and understand data, and also communicate that understanding to others:

- Exploring and analysing data: Visualisation is a central tool in carrying out analysis, enabling researchers and other users to explore datasets to identify patterns, associations, trends and so on;
- Presenting and communicating data: Good data visualisations can help users make robust decisions based on the data being presented. They should provide an effective representation of the underlying data, to help answer a particular question at hand. Communicating data in this way can support senior decision-makers engaged in strategic planning, service managers needing to understand where delivery could be improved, and managers wanting to monitor performance.

These methods should "above all else, show the data"[27], and should:

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[25] A series of Audit Commission reports look at how information and data is used by local authorities – e.g. http://www.audit-commission.gov.uk/nationalstudies/localgov/pages/nothingbutthetruth.aspx

[26] http://www.improving-visualisation.org

[27] Edward Tufte - "*The Visual Display of Quantitative Information*",

- Help the audience think about the important message(s) from the data, rather than about methodology (graphic design, the technology of graphic production etc), or something else
- Avoid distorting what the data have to say
- Present many numbers in a small space - but also emphasise the important numbers
- Make large data sets coherent, and encourage the audience to compare different pieces of data
- Reveal the data at several levels of detail, from a broad overview to the fine structure

6.1.8. This is an apparently quite onerous set of demands, and the resource implications for regular monitoring could be considerable unless it is possible to systematise and automate the processes of getting, sorting and putting the data into its presentational form.

6.1.9. There are some web sites that provide ready made monitoring. These include:-

- Audit Commission OnePlace, although the Commission is now being abolished, and only gave quite dated local authority level data.

  http://oneplace.audit-commission.gov.uk/Pages/default.aspx

- Some housing factors, but mainly economic indictors, are shown at Oxford Consultants for Social Inclusion (OCSI)- http://www.local-economic-monitor.org/

7. Uses of data and information in housing strategy and planning

7.1.1. A number of similar features were found in how data and information functions have typically been used in Housing Strategy.

7.1.2. It has tended to be dominated and driven by upward reporting and requests for information, some routine, some on an ad hoc basis. This means that data is often not linked and explored to answer realistic research or policy questions, but is sent upwards in the form of separate, single variable tables in reports, where it then cannot be joined, and so just sits in monitoring reports as fragmented, detached data.

7.1.3. A proliferation of monitoring and review bodies attempting to 'join up' policy development has led to an increase in this kind of upward reporting. But the way the data is requested, compiled, aggregated and interpreted, and the level of specific local knowledge of many participants in these strategic forums, often means that it cannot then be used effectively to decide policy and make decisions more locally, where data can be more relevant and interpreted effectively.

7.1.4. However a major advantage of central collection of information and data is that it *eventually* becomes available in a consistent and comprehensive form, allowing it to be accessed and utilised more easily and giving more or less direct comparisons between local authorities. However this does not mean that it all has to be collected by central government and subject to cross checking and long delays before publication.

7.1.5. More local collection of data could make it accessible and useful much sooner. A Leicester&shire HMA data collection service, based in the City or County Council could provide this, or it could perhaps be a service provided by a body such as Hi4EM. There would be a

resource implication, but this could perhaps be offset by also providing data for upward reporting when required.

7.2. Research, data and housing intelligence in Housing Strategy

7.2.1. Visits, interviews and a group discussion with relevant officers found that Housing Strategy research tasks tend to be carried out on a quite ad hoc basis, so officers will go on a hunt for appropriate data to use, and make the best of it, as and when the need arises.

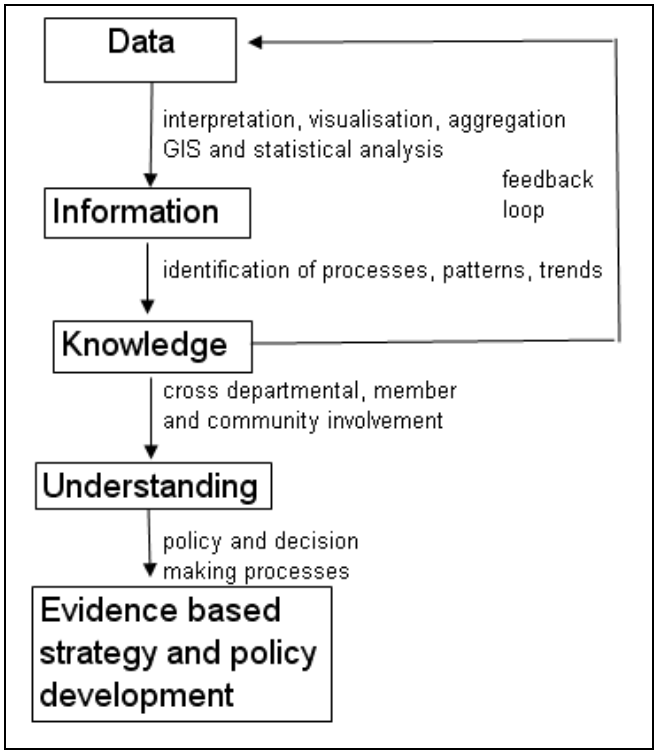
7.2.2. This means it is often very dependent on the skills, knowledge and aptitudes of individual staff members, and more systematic approaches which can be repeated are not common. There is relatively little literature review and reference to previous research, either external and general or specific to the organisation. This is not helped by older reports being in paper form, or if in electronic format not being stored in an indexed library style system, or in the same research library folders on a network. Some officers will find sources and references and return to these frequently, and so systematise their research processes, but this appears to be the exception rather than the rule.

7.2.3. This is perhaps inevitable to some extent due to variable skills, expertise and background in research techniques and processes, but more assistance to housing strategy researchers in the form of training on techniques, relevant software, advice, guidance, check lists, web links to data sources, and readily compiled data could be improved and enhanced. Simple web pages of links such as one compiled for this project can assist:

http://www.blinehousing.info/LeicsDataProject/Data_and_information_web_links.htm

7.3. Data, information, evidence and policy

7.3.1. Housing and Planning policy and decisions are increasingly expected to be more and more evidence based, and the amount of evidence available through different data sources continues to grow. However data itself is just many, sometimes many thousands, of individual records of particular variables, or sometimes combinations of them. Data by itself cannot give answers but must be collated, aggregated and interpreted to produce information that can provide intelligible evidence to underpin policy judgements and decisions. Overall, the idealised process is broadly:



7.4. Software applications

7.4.1. As more detailed data becomes available, different methods and systems are required to handle and make sense of it. Tables of data on paper very quickly become too large to be intelligible just by reading them; indeed trying to present complex data in paper format

reports is a major limitation to the effective use of data as evidence to underpin policy.

Excel

7.4.2. Spreadsheets, usually Microsoft Excel, are the most common methods used for handling such data, and it is the only analytical software application found readily available in all the participating councils and used by 90% for analysis. While it has many functions and also add-ons to enhance its capabilities, it also has limitations. Not surprisingly, there is also a very wide range of spreadsheet skills and confidence.

7.4.3. Other analytical software applications are some considerable way behind in the extent of use. The online survey found that Word was the next quoted most used at just over half, although it is essentially a word processor, with only very limited data handling capabilities.

Access

7.4.4. Microsoft Access is used by just 40% of respondents to the online survey. However it provides full database capabilities and can perform some tasks much better than Excel. It can be set up with input forms, queries and reports to structure and handle larger amounts of data, and queries and reports can be saved for future use so that it is much better for ongoing monitoring systems. It is part of the Office suite, quite inexpensive, and fully compatible with Excel and Word. Nevertheless it is not available to some Housing Strategy staff in some of the local authorities.

SPSS and similar statistical packages

7.4.5. Another common and more powerful statistical data analysis application is SPSS, which is used by just 9% of respondents to the survey, but is not available at all in many of the participant local authorities It is quite expensive, (about £1,200 plus £230 annual

maintenance and upgrades for a single license) but allows many functions such as filtering, cross tabulation, correlation and regression to be carried out much more effectively than in Excel. Bulk or dispersed purchases maybe possible - for example universities generally have a site licence - perhaps through Hi4EM. There are other similar applications such as Minitab, Beyond 20/20, Supertable, and some, such as OpenStat and PSPP are free.

Geographical Information Systems (GIS)

7.4.6. All housing data is spatial, and appreciating differences by location is crucial to understanding housing market systems. All local authorities now have a GIS somewhere within the organisation, sometimes as a separate function, but often within the Planning department.

7.4.7. A variety of systems were found in the survey and visits, including ArcView, MapInfo, GGP, and Cadcorp. However these systems are not always accessible to the Housing Strategy function, and although some strategy officers see the clear need, getting it can often prove difficult. In some local authorities a close relationship with Planning means that the GIS can be utilised for Housing Strategy, but even here it means that mapping must be requested for someone else to do rather then becoming an integral part of housing data analysis and exploration.

7.4.8. A key point is also that local authorities currently mainly use their GISs primarily to record data on locations of land parcels, sites, features and legal boundaries, that is more as ‘cadastres’ - a register showing the details of land. However this is not the main benefit of GIS in housing and planning strategy, where it is much more useful to visualise, explore, link, re-aggregate and overlay different data and variables to build a demographic, socio-economic or housing mix picture of areas, with the ability to ‘drill down’ into sub areas.

7.4.9. This has various implications. It means that some GIS systems are less well developed for this exploratory role, and it is not well

understood by the GIS officers or by the GIS company representatives. Local authority GIS has tended to develop in a particular direction which is not well suited to Strategic Housing data analysis and interpretation.

7.4.10. Most GIS's do now have capabilities for rapid, interactive data exploration built into them, if it can be discovered and learnt, but it is not as yet utilised well in most local authorities. A notable exception to this is at Leicester City, where MapInfo is used for data exploration and visualisation, but the issue here is that it can tend to be driven by 'requests for maps', rather than interactive, iterative exploration.

7.4.11. A further problem this raises is that local authority management often do not appreciate this distinction and so do not recognise that their current GIS function is not well suited for the Strategic Housing function, or realise the limitations this imposes. GIS systems have been expensive in the past, up to £2k per user per year, but competition and technical advances have reduced prices, such that now GIS can now be obtained for a one off cost of around £250 per user, and with more powerful functionality than systems ten times that price. There are even some free systems.

7.4.12. A further change is that many Ordnance Survey boundary and background mapping files required for GIS are now free for download[28] under the Open Government data programme. This may not make too much difference to local authorities, who operated under Service Level Agreement licensing with Ordnance Survey, but it means that files can be obtained more readily, shared with others outside the authority such as RSLs and contractors, and are not restricted to just the authority's data.

[28] http://parlvid.mysociety.org:81/os

Summary – software issues

7.4.13. Not having an appropriate range of analytical software available is a major limitation on the capabilities of Housing Strategy and other staff in local authorities to utilise and understand housing related data, and to develop the skills the strategic housing role now requires. Compared to external consultancy and research the costs are modest, and the skills acquired and knowledge resulting from more direct analysis would be able to develop in house

7.4.14. As with all such software applications, potential users do not know what is available and how their work could benefit until they see it in use, and moreover it is also an 'unknown unknown' for them - they do not know what they do not know, until they are made aware of it and see it in action.

7.4.15. There are of course skills issues, and some steep learning curves. Some officers and many managers are not comfortable with detailed datasets and analytical software, and there is often avoidance of tasks that require it, and sometimes even an attitude of "I don't understand data" that would be widely considered unacceptable if applied to any other essential part of a job[29].

7.5. IT systems

Networks

7.5.1. A key problem with improving data handling and analysis software was found with the underlying IT infrastructure in some local authorities. Local authorities all have networked systems such as Citrix or Novell, and in some this networked system is the main or only means of delivering software applications to users. This means that any new software must be added to the server, or more often several

[29] *'humanities graduates with little understanding of science, who wear their ignorance as a badge of honour'* Ben Goldacre, Bad Science.

servers, and even though a department may need the additional software and have the budget for it, it still cannot be easily obtained and installed.

7.5.2. Clearly networked systems are essential to provide communication, file sharing, security and better value on common software, but for specialist and minority applications they sometimes appear to limit options and become counter productive. The best systems observed were a mixture of PCs linked to servers, with software delivered by both the local PC and across the network as appropriate. This enables specialist applications to be installed or tried out on local PCs without having to make them available across the whole network. Housing Strategy now has requirements for data analysis which mean it needs more than just Excel, and the most efficient and cost effective way to deliver this would probably be for them to have their own PCs.

Displaying strategic housing data

7.5.3. Increasing use of models, data and GIS also means that Housing Strategy sections could also benefit from having the means to display data on large monitors for shared viewing. Being able to collectively view and discuss housing data, mapping of it and specific sites on a visible, readily accessible display, rather than special one off 'presentations' could help bring about a step change improvement in how housing data is used.

Restrictions on sites and file downloads

7.5.4. Restrictions on accessing some sites and downloading certain types of file also caused frustrating delays for some officers. Much data, for example from ONS, is now packaged into compressed .zip files, but firewalls are set so they cannot be downloaded by users in some LAs, and requests have to be made to the IT section to allow or get them. Sometimes there are restrictions on file sizes which are ridiculously small compared to the sizes of data or graphics files

needed for effective strategic housing analysis these days. In many cases users just give up at this obstacle, and do not get the data. This is not to underplay concerns about virus infections on networks, but other methods of protection are available which would not interfere with or prevent data being used effectively, such as scanning inside the .zip files.

7.5.5. A variety of analytical software as described in section 7.4 is now essential to be able to utilise the extensive and growing amounts of detailed housing related data; but often the IT applications available, and restrictions on the systems in general, appeared to be limiting and obstructive. Often too, strategy officers are blocked from finding out and learning and so do not know how such IT could help them do their jobs better. Managers and IT support sections also often fail to recognise that the strategic housing role requires different software and wider access to data, and do not press for changes and improvements. Again, stand alone PCs and more independence in IT for Housing Strategy, so that they can try out different exploratory software, may be one way of overcoming some of the issues.

7.5.6. This is likely to become more important with the new localism agenda and Open Source planning involving communities more. Data and evidence will be required for specific sites and neighbourhoods, and able to be presented, visualised and explored by people who are not experts or professionals. This will require not only better IT applications, but also different ways of presenting them, such as on large screens, in communal settings, on the Web, or through digital TV.

8. Joining up, inter local authority and cross departmental working

8.1. Making data compatible

8.1.1. A key point for making the most of strategic housing data is that it helps greatly if it is consistent and compatible between local authorities, but that does not mean that it has to be held or handled in the same systems. Making the extracted datasets compatible is usually sufficient.

8.1.2. As most tasks carried out by local authorities are fairly similar, this means that the data is essentially much the same, although it can be held in systems that have different field names, different classifications, and different data structures. These are simple things, like one local authority may use the classification 2 bed terrace (end), while another may use 2BTend. These simple differences all make it much harder to reconcile the data, and bring it together to allow comparison and cross boundary analysis.

8.1.3. A relatively simple way of improving this is therefore to rename and standardise fields and introduce common classifications when the opportunities arise. This does not normally require any policy discussions, changes or concessions. If changes are not possible within operational systems because they come with set field names and classifications, then exported data can be put into spreadsheets with standardised names, etc, as far as possible.

8.1.4. This type of data cleaning and reconciliation process is what happens in any data collection exercise, for example in the SHMA. If it could be done at source and automated to some extent it would go a long way towards improving use and usefulness of data.

8.2. Linking different datasets

8.2.1. Local authorities typically have a number of systems which all hold data on properties. These almost always each have a unique property reference number (UPRN) for each property, but these are often different in the different systems. This is gradually being addressed and improved over time, often by using the NLPG identifier as the UPRN, but another simple but effective way to link the data in different systems is to develop a common meta-database which links the UPRNs from the different systems under a single, common over-arching UPRN, such as the NLPG or TOID. It would still require the addition of the common UPRN to each database, but this may be possible by linking on address, or parts of it, adjusting the matching query to the different formats for each system.

8.2.2. This would allow data from different sources to be combined to build a more comprehensive and detailed picture of stock and households.

8.3. Setting up data and trend monitoring systems

8.3.1. Housing Strategy would benefit from setting up trend monitoring systems for a whole range of variables, which should be routinely completed at regular intervals to build up into an ongoing picture of housing market patterns and trends. These can be set up as simple spreadsheets, or perhaps in a database to be able to link items together more easily. It could include items such as lets, transfers, the total on the housing register, house prices, numbers of sales, repossessions, homelessness, PRS rents and Local Housing Allowances and gaps between them, completions, affordable completions, and so on. The objective is to have a simple ongoing record to build a time series. Reminders from automated calendar

systems will help keep on top of the recording, as does keeping them all together and easily accessible in a clearly labelled folder structure.

9. Sharing data collation and regional data sourcing

9.1.1. Part of the original Leicester&shire data project was to look at the role Hi4Em could play in supporting and assisting better use of data for housing strategy and policy development. Potentially this could cover several aspects, some as extensions of what Hi4EM does already, and some as new functions and services.

9.1.2. The current role is described on the web site:-

> *Hi4em - Housing Intelligence for the East Midlands - is a project funded by the Regional Housing Group of the East Midlands Regional Assembly and supported by G.O.E.M. - Government Office East Midlands. We aim to source, display and map a wide range of data relating to housing markets and private sector housing conditions in the region. The data provided supports Local Authorities working to make homes decent and more energy efficient, particularly for vulnerable households and supports regional and sub-regional assessments of housing market conditions.*

9.1.3. As this says, Hi4EM began, in 2005 or so, as support for local authority functions on private sector decent homes. However it has gradually expanded its role so that it now collects and hosts data which is useful to a wider range of housing functions. Expansion of this is one of the ways in which it could help local authorities, and establish a useful and cost effective service for the region.

9.1.4. However there may also be other bodies which could provide data collation, aggregation, dissemination and analysis services. This could include public and private sector bodies. For example the county observatories, or LSR-online service (http://www.lsr-online.org)

could provide similar housing data services. Others such as Hometrack have provided a similar service for many councils and housing associations in the UK, including many in the East Midlands. This could present choices for the participating Leicester&shire local authorities which it would be beneficial to consider carefully and systematically.

9.1.5. This project can perhaps help with the criteria and process for making such a choice between these now potentially competing options.

9.2. Statistical and commercial data sources

9.2.1. Current data held by Hi4EM is shown on the web pages - http://www.hi4em.org.uk/EastMidlands/MapsAndReports/. Datasets being considered for addition include empty properties, social rented stock and lets, private sector properties and rents. Others could include migrations, household projections, health data and profiles, student housing, and more.

9.2.2. Such an expansion of datasets would also, however, benefit from some new or additional ways of handling and finding the data. There is already so much available on the website that one of the most common complaints from users is that they cannot find what they want, or that it is so buried that they do not know it is there. Greater familiarity helps to overcome this, but other ways of classifying, searching for and cross linking data sources would be helpful.

9.2.3. Hi4EM have also now negotiated provision of bulk data from Experian at very much better value than individual local authorities could hope to achieve.

9.2.4. Further value could be added to data by geocoding it ready for use in local authority's own Geographic Information Systems, most of which will import ESRI .shp files.

9.3. Use of data from local authority and other systems

9.3.1. While much of this general data comes from national or commercial sources, there is also potential for data to be extracted or 'mined' from local authority and other administrative systems, and anonymised or aggregated for statistical and research uses. Hi4EM is already starting to ask for this, for example by requesting empty property data, which usually comes from Council Tax queries.

9.3.2. This must all be done with due care, but provided that personal data is protected and not disclosed in forms or combinations that could allow identification of individuals and loss of data which might cause them distress, it is within the DPA[30] and strongly encouraged by government. Indeed government have now established an open data policy, e.g. www.data.gov.uk to make thousands of datasets available for public, business and planning use.

9.3.3. Related to this, a further way in which Hi4EM or a similar body could perhaps provide a useful service to local authorities is by undertaking some of the upward reporting of data and information that absorbs much time and effort of local authority staff. If Hi4EM already collect, clean and process data from which some of this information comes, they will both build a consistent central database and develop the skills and contacts for collecting and compiling the data. This is a function which would benefit from having more centralised, specialist support, although local staff would clearly still need to be involved. This could include:

- Acquiring, collating, preparing and hosting general data that is used by LAs, as a service to save them all having to do it separately.

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[30] See for example or http://www.data-archive.ac.uk/sharing/anonymise.asp , http://www.managingip.com/article/2004292/Lords-rule-on-disclosure-of-anonymised-data.html ,http://www.publicservice.co.uk/pdf/tlr/winter2004/TLR5%20Bob%20Line%20ATL.pdf,

- Collecting data from LAs and RSLs that they are, or have been, required to provide for other bodies – e.g. CLG, HCA, so that it is consistent, prepared in one place, to free up staff in LAs to actually explore and use their data more.

9.3.4. Following changes to regional structures, it seems likely that Hi4EM, and perhaps other data aggregators and providers, may need to become financially self supporting. Local authorities stand to save substantial costs on data purchase and gain considerable benefits in being able to access and use strategic housing data more efficiently and effectively if they can find ways to support and maintain it.

9.3.5. Both Leicester City Council and Leicestershire County Council Supporting People sections were consulted as part of the project, and provided useful background to their activities, and insights into their systems and the issues and problems they face.

9.3.6. They confirm that data and evidence for the 'needs' side of Supported Housing has long been a problem for Housing Strategy development and support services planning. Supporting People departments have good data and monitoring systems for the supply and provider side because their main role is to award and administer contracts. Much of their work has been driven by upward reporting and monitoring, although this may now change, along with much else, with the new government.

9.3.7. However data and evidence to inform assessments of need are usually more elusive and fragmented, and, like other Housing Strategy data tend to be found and applied in a more piecemeal and ad hoc way. There were also some indications that responsibility for assessment of the need for supported housing may fall between Housing Strategy and Supporting People, with each thinking the other should be providing estimates of the level of need.

9.3.8. No universally accepted method for quantifying the need for supported housing or, more generally, housing related support, has yet been developed, as far as is known. Such need often cannot be directly measured, so policy makers and commissioners must rely on accessing and interpreting a range of other evidence, often compiled for other purposes. General surveys will not help with assessing support needs, because cases are scattered and dispersed in the wider population, and the samples required to find them would be huge and extremely expensive, apart from problems of biased and reserved responses.

9.3.9. Supported housing is also not the only mechanism through which housing-related support can be delivered to vulnerable people. Such support can often be delivered equally well via non-accommodation-based services such as floating support, resettlement and outreach schemes. Indeed in some quarters hostels and special needs housing projects have been seen as perpetuating needs and certain patterns of behaviour.

9.3.10. Identifying the number of vulnerable people in need of supported housing also does not lead directly to a need for a certain quantity of supported housing. Some people will have a permanent need for the service supplied in such housing, others will need it for a short time. So expected duration of stay is an important factor to take into consideration when assessing likely need, that is there is a supported housing 'timeline', just as with general needs housing, but with added complexities and often shorter, but perhaps recurring, periods.

9.3.11. In addition there are locally specific factors which can make significant differences to the net requirement for supported housing in any area. Very important amongst these is proximity to nearby services, which could be in a different local authority area. This applies especially in the Leicester City conurbation, although there are administrative issues about resources and payment for services which can appear illogical and inefficient, but cannot be ignored or overridden.

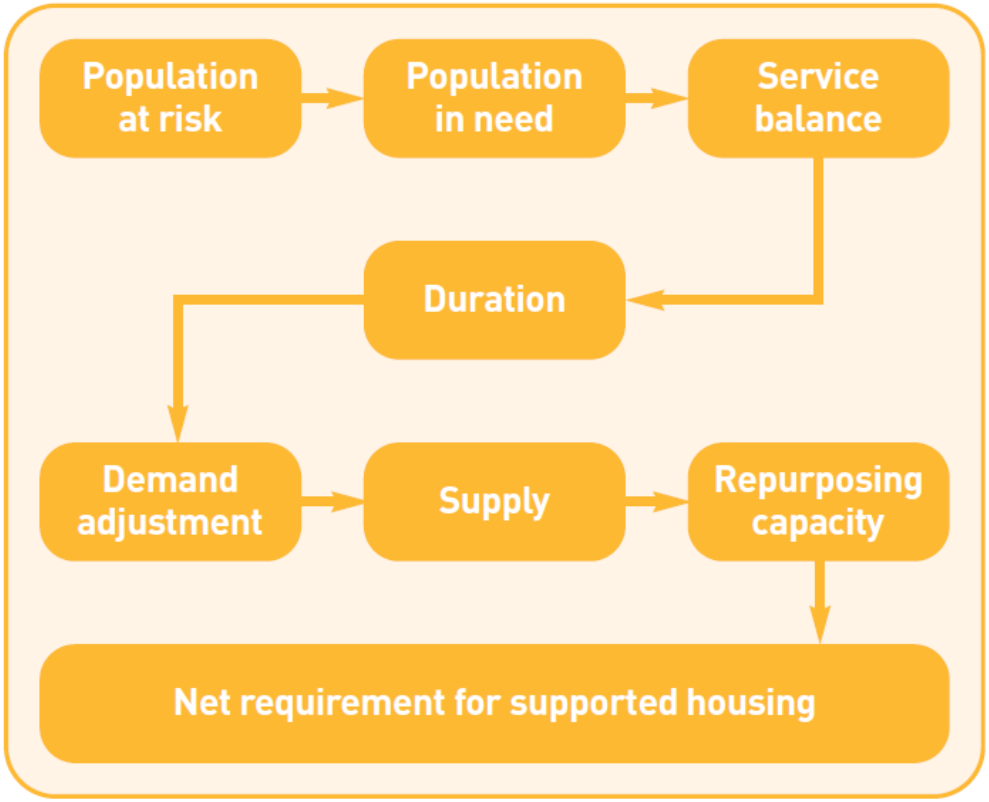
Data to help inform supported housing needs assessment.

9.3.12. Assessing actual needs for supported housing is beyond the brief for this project, and it is in any case a specialist and resource intensive role. However prevalence rate models have not been felt to be useful. What this project can therefore perhaps contribute is to help identify sources, or potential sources, of data and evidence which could help with such assessments, based on the wider investigations and related findings for general Housing Strategy. As with other aspects of Housing Strategy these can perhaps eventually be built into

models which summarise and exemplify the relationships between different aspects and indicators of supported housing needs.

9.3.13. A National Housing Federation study[31] for London (2007) sets out a flow chart for general assessment. It is essentially a prevalence rate model, which applies the rate of each component to the one preceding it to derive an overall numerical estimate of need, similar to the housing needs model.

Figure 31 Prevalence rate approach for estimating needs for Supported Housing



9.3.14. The report explains the meaning of each of the steps, and emphasises the limitations of the model, including that it is insufficiently fine-grained to determine the precise balance between specially designed supported housing and 'standard' social housing which is designated for vulnerable people.

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31 http://www.housing.org.uk/Uploads/File/London%20Housing%20Federation/Publications/Building%20for%20all%20-%20summary%20report.pdf

9.3.15. Local sources can potentially help with more fine-grained, localised assessment. The finest grain would be to know every individual case as it forms and develops. In some instances this may be possible, for example for children born with disabilities. The Schools Census (formerly PLASC) records Special Educational Needs (SEN), and should in principle allow the totals, distribution and some specifics of cases coming through schools over time to be analysed. Using the 2007 data obtained for the SHMA, examples are given below. The Schools Census has a two way classification of disabilities.

Figure 32 Example Pupil Special Educational Needs Type

ASD	Autistic Spectrum Disorder	84
BESD	Behaviour, Emotional & Social Difficulties	847
HI	Hearing Impairment	100
MLD	Moderate Learning Difficulty	1,788
MSI	Multi-Sensory Impairment	4
OTH	Other Difficulty/Disability	226
PD	Physical Disability	229
PMLD	Profound & Multiple Learning Difficulty	41
SLCN	Speech, Language and Communication Needs	529
SLD	Severe Learning Difficulty	178
SPLD	Specific Learning Difficulty	345
VI	Visual Impairment	63

Figure 33 SEN Provision

Pupil SEN Provision		
N	No special educational need	35,929
A	School Action or Early Years Action	6,016
P	School Action Plus or Early Years Action Plus	2,967
S	Statement	1,467

9.3.16. Mapping this data in GIS, then running queries for each category gives summary figures for different areas.

Figure 34 Re-aggregated data on pupils with Physical Disability - example

Local authority	Pupils with physical disability
Leicester	198
Blaby	51
Charnwood	77
Harborough	39
Hinckley & Bosworth	55
Melton	19
North West Leicestershire	48
Oadby & Wigston	31

The data can be broken down further into more localised areas, such as settlements, wards or travel area catchments, for example near bus routes.

Figure 35 Re-aggregated data on pupils with Physical Disability - example

ONS Urban area	pupils with physical disability, 2007
Leicester Urban Area	282
Leicester	219
Coalville	27
Hinckley	22
Wigston	21
Loughborough	15
Melton Mowbray	13
Shepshed	10
Earl Shilton	9
Narborough/Enderby	9
Oadby	9
Birstall	9
Market Harborough	8
Enderby	7
Blaby	7
Lutterworth	6
Ibstock	5
Broughton Astley	5
Fleckney	5
Kirby Muxloe	5
Whetstone	5

9.3.17. As birth dates are also recorded this can be further split down by age bands, to show cohorts of special needs as they potentially come into the supported housing system. This is not up to date data, but the potential for anonymised but more detailed, localised assessment to assist forward planning is clear.

9.3.18. Housing Benefits data may be another fruitful local source, which will record entitlements to Disability Living Allowance, Attendance Allowance and Carer's Allowance, and contains questions on mental impairment, registered blindness and long-term sickness or disability, again with both age and postcode. Council Tax may be a source of data on band reductions for adaptations for disabled people. All Council Tax and Housing Benefit sections said that they would be willing to help with data provision, and some have done so already.

9.3.19. Other sources could include tenancy records, as these improve to record more detail about households, or lettings records through CORE or the CBL systems.

9.3.20. The point here is to explore and use the various sources of data from different agencies and organisations which contain information and indications about special needs to understand, estimate and plan more than they appear to be used at present. For the more fragmented and dispersed incidence of special needs database intelligence can be even more necessary and appropriate than for more general requirements.

9.3.21. There will also inevitably be difficulties and misunderstandings to overcome in terms of data protection and confidentiality, and great care must be taken with the data, but there are now strong moves towards open government and making data available.

9.3.22. National client records data below shows the relative realised demand from each client group. Each client group needs to be considered in turn, and the data explored and analysed to find out what it can reveal.

Figure 36 UK figures for Supporting People services

Supporting People Client Records: Clients entering Supporting		
People services, by primary client group[3], England, Q1 2010-11[4]		
	Number	*Percentage*
Older people with support needs	2,100	*5*
Older people with mental health problems	200	-
Frail elderly	100	-
Mental health problems	4,000	*9*
Learning disabilities	700	*2*
Physical or sensory disability	1,400	*3*
Single homeless with support needs	11,900	*26*
Alcohol problems	1,600	*3*
Drug problems	1,400	*3*
Offenders or at risk of offending	2,100	*5*
Mentally disordered offenders	-	-
Young people at risk	3,400	*8*
Young people leaving care	400	*1*
People with HIV/AIDS	200	-
Homeless families with support needs	3,100	*7*
Refugees	800	*2*
Teenage parents	700	*2*
Rough sleeper	1,100	*2*
Traveller	200	-
People at risk of domestic violence	5,300	*12*
Generic/Complex needs	4,600	*10*
Total	**45,100**	***100***

Source: SupportingPeople.statistics@communities.gsi.gov.uk

9.3.23. Administrative and monitoring data will not cover all these needs groups, because many are not recorded and tracked in systems unless and until they start to use services, when they are already a current need and no longer a potential need that could have been planned for. However there may be other as yet untapped data sources that could be utilised, particularly through other agencies such as health, education, police and legal enforcement, and social services.

Appendix 1 **Flow chart for model**

1 Derive number of new households that will emerge per year over a period of interest

1a Take the number of households that are projected to exist in ten years time (or a convenient period)
1b Subtract the number of households that were projected to exist ten years earlier when ten years younger
1c The difference is the total new households that are projected to emerge over that period
1d Divide the toal by the number of years period to get an annual figure

2 Estimate the proportion unable to afford

2a Estimate the lower quartile entry level price for the relevat area(s) (see http://www.blinehousing.info/Camtasia/toploquartile_derivation/toploquartile_derivation.html
2b. Set the input parameters for the threshold level income required to buy or rent (example 10% deposit, 3.5 times income)
2c Calculate the percentage of households that cannot afford to buy from these factors (see model)
2d Apply this percentage to the annual number of emerging households
2e The number unable to afford is one component of housing need

3 Estimate the number of in migrant housheolds

3a NHSCR, Census or other data on migrations converted to households
3b Household projections also inlcude an element of migrations, but it can be out of date.
3c Apply reducing factors of
i ability to afford (2c)
ii lower propensity of migrants to seek affordable or social rented housing (x .33)
3d It can be argued that household projections already include an element of migration, and that this componet should be omitted
3e However since only under 35s are used in the model this would not capture over 35 migrants
3f Migration components in projections also often lag behing actual numbers

4 Estimate the number of owner occupiers in the area being assessed

4a Census data is usually a quite accurate baseline for owner occupiers ,
4b Add dwellings developed since 2001 if this has been substantial. Usually about 1% a year or less
4c Apply the factor for owner occupiers falling into housing need - standard factor 0.234%
4d This can be refined by considering repossession rates (e.g http://www.york.ac.uk/res/ukhr/ukhr0708/tables&figures/excel/07-051.xls
or http://www.cml.org.uk/cml/filegrab/2AP4.xls?ref=2753

5 Estimate the backlog need

5a Use the HSSA to get Housing Register figures for the prvious few years http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/localauthorityhousing/dataforms/
5b Consider trends in the data and decide whether to use an average for the past few years (4 is in the HSSA) or a trend figure
5c Adjust this for households not in need or above income threshold to be able to afford if data is available

6 Decide on a policy period over which to address the backlog

5a A period of 5 years is the minimum over which it shoud be addressed, but more is often more sensible and defencible

7 Total the components to give overall gross need

6a This is the **gross** need before the affordable supply is taken into account

8 Estimate the annual supply flow of affordable housing

7a This consists of **net** lets (taking off transfers) of local authority and RSL rented housing and affordable (Intermediate Housing) sales
7b HSSA includes figures for previous years for all lets and transfers, or use local administrativesystems
7c CORE data gives RSL lets and transfers (www.core.ac.uk)
7d Core also gives spatial locations (postcode, Output Area) of RSL and some LA lets for more detailed assessment
7e Judgement will again need to be applied on whether an average or a trend is most appropriate

9 Estimate net need by taking annual affordable supply from annual gross need

8a Annual estimated need *minus* Annual estimated supply *equals* Annual shortfall = Need per year

Appendix 2 Type and size mix model

The type/size mix model developed out of Strategic Housing Market Assessments, and combines a forward looking component which applies to market housing and some affordable housing, based on household projections, with a backlog component based on 'expressed need' in Housing Registers, optionally modified by other administrative housing data such as length of occupancy of different types/sizes, needs pressures, or turnover

The key is understanding it all as a *housing market system*, in which relatively slowly changing 'stocks' of dwellings are occupied for different periods by comparatively faster 'flows' of households of various sizes, with widely varying purchasing power, and of different ages and circumstances, or 'lifestages'

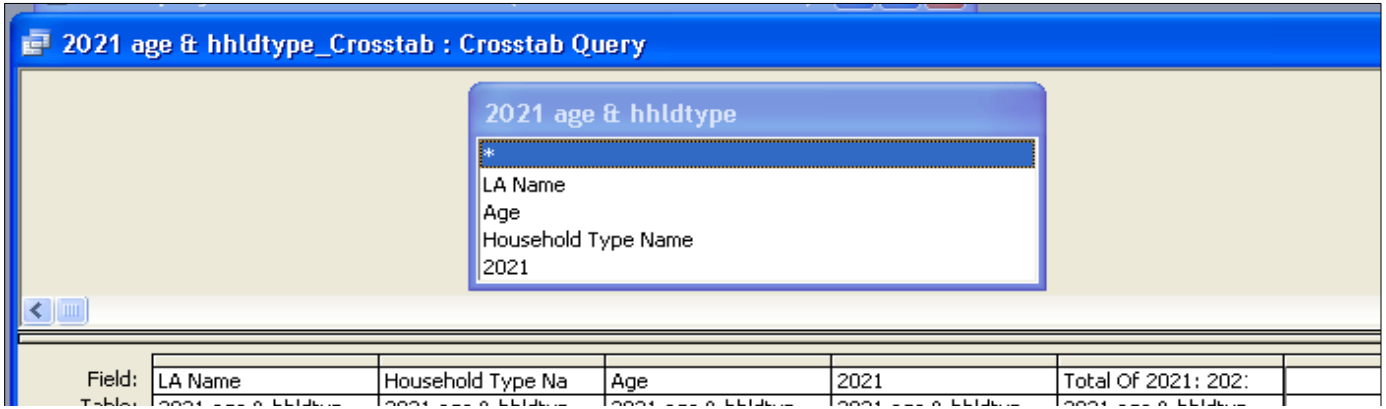
The basic household projections are provided by CLG, with other adjusted and weighted versions available through the Chelmer and Popgroup/Housegroup models . They may be based on different years, and in essence apply past trends of behaviour, derived mainly from Census data, to different population cohorts as they age .

The model requires input of a more detailed matrix giving both household type and age group. This is because separating the totals into one dimensional variables of just age or household type loses the crucial link between lifestaage and housing demand, need and circumstances

The household type/age matrix can be generated from Chelmer or CLG household projections. This is easier in an Access database using cross tabulation queries selecting the main unconcealed household types representives a particular year (e.g. 2021, 2026), and exporting the results into Excel then pasting them as values into the input sheet of the model

The first simple Access query to select the main housheold types is *One person household representative Or "Other multi-person household representative" Or Like "unconcealed*"* with the local authority name for which it is required in the LA name selection criteria

The cross tabulation to convert this into the required matrix is then as shown below, applied to the simple query for that year and Local authority.



Field:	LA Name	Household Type Na	Age	2021	Total Of 2021: 202:	
Table:	2021 age & hhldtyp	2021 age & hhldtyp	2021 age & hhldtyp	2021 age & hhldtyp	2021 age & hhldtyp	
Total:	Group By	Group By	Group By	Sum	Sum	
Crosstab:	Row Heading	Row Heading	Column Heading	Value	Row Heading	
Sort:						
Criteria:						

The **backlog need** is derived from a Housing Register extract, by a cross tabulation or Excel pivot table, which breaks down applicant chices or entitlements by size and type, primarily the distinction between General Needs requirements (houses, flats abve ground floor) and Older Persons housing (bungalows, ground floor flats)

Local authority systems and categories vary, so it has not been possible to standardise this. The pivot table results then need to be re-allocated ***'by hand', using experience and judgment orany other local evidence available,*** to the model categories of 'upsizing' or 'downsizing' which reflect the households lifestage and position on the housing ladder e.g.

1bed flats
2 bed upsizing flats
2 bed houses
3 bed houses & larger
3 bed flats/cluster
1/2 bed downsizing houses/ flats/bungalows
1 /2 bed elderly/care

The model will then total the different components on the same basis and produce a summary result as percentages

Policy and evidence based judgment inputs

These cells enable variable inputs when judgements must be made about data or evidence, or where the input is a matter of policy emphasis or direction which cannot be wholly based on data. For example whether to emphasise the backlog need as shown by housing register for new social housing, or alternatively to give more weight to likely future needs

Policy weighting on forward need projections applies to market housing for the future, and some of the social sector as far as it looks forward, but does not take any account of backlog need - e.g. housing register
Policy weighting on backlog need - applies to backlog social need as reflected by the housing register

For backlog need

weight on raw housing register figures weights backlog -i.e social need - by pure housing register figures as they are - e.g perhaps lots of young singles
weight on housing timeline - weights backlog need by a timeline - how long people are in different types/sizes, or some other measure of realtive need - such as points awarded or priority categories

estimated proportion of downsizers over ten years - estimate of proportion of empty nesters who will downsize over policy period (e.g ten years)
Data from surveys suggests that some 2-3% of householdas aged over 55 move each year, which equates to about 25% over ten years. The national average for all ages is some 10-15%.