Crisis

Together we will end homelessness

Housing supply requirements across Great Britain:

for low-income households and homeless people

Professor Glen Bramley

November 2018

NATIONAL HOUSING FEDERATION

About Crisis

We are the national charity for homeless people. We help people directly out of homelessness and campaign for the changes needed to solve it altogether.

We work directly with thousands of homeless people every year. We provide vital help so that people can rebuild their lives and are supported out of homelessness for good. We offer one to one support, advice and courses for homeless people in 12 areas across England, Scotland and Wales.

How we help someone depends on their individual needs and situation. It could be with finding a home and settling in, getting new skills and finding a job, or help with their health and wellbeing. We use research to find out how best to improve our services, but also to find wider solutions to homelessness.

Together with homeless people and Crisis supporters, we campaign for the changes needed to end homelessness for good.

About the National Housing Federation

The National Housing Federation is the voice of housing associations in England. Our vision is a country where everyone can live in a good quality home they can afford.

Our members provide two and a half million homes for six million people. And each year they invest in a diverse range of neighbourhood projects that help create strong, vibrant communities.

About the author

Glen Bramley is Professor of Urban Studies based in I-SPHERE (Institute for Social Policy, Housing and Equalities Research) at Heriot-Watt University. His research covers planning, housing need, affordability, local services, poverty, destitution, homelessness, and severe/multiple disadvantage. Recent publications include books on poverty and social exclusion and planning and the housing market.

This report is based on analysis and full report by Professor Glen Bramley, Heriot-Watt University. All views contained in this report are the responsibility of the author. The views expressed should not be assumed to be those of Crisis or the National Housing Federation.

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Foreword

We have failed over consecutive years to build enough homes for people in the greatest need. There is currently huge demand for more housing that provides people on low incomes with security, decent living conditions and affordable rents. Across many parts of Great Britain, the need and demand for low-rent stable housing far outstrips supply. But in order to build enough homes we must first understand how many, of which type, and where they are needed.

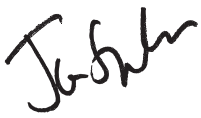
This research fills an evidence gap of the current and future housing requirements across Great Britain by making an assessment of how many homes are needed to address the existing shortage of houses, as well as the future demands of the growing population. The research shows that we currently have 4.75 million households across Great Britain who either have no home at all or are living in precarious and unsuitable accommodation. This simply cannot continue.

Building the right number of homes each year will not solve the crisis alone – they need to be the right type of homes. To address this need we need to build over 100,000 homes for social rent every year for the next fifteen years across Great Britain (90,000 in England). This would be part of a programme of wider housebuilding of 380,000 homes built each year (340,000 in England). The report also worryingly identifies the huge problem of affordability. Only 45% of all under 40s can afford homeownership and this decreases to 34% when you look at those currently privately renting. Right now, councils across Great Britain are desperately struggling to find homeless people somewhere to live. This means thousands of people are ending up trapped in B&Bs and hostels or on the streets, exposed to danger every night. It also means that far too many people are living on a knife edge, in danger of losing their homes because of sky-high housing costs.

We know it will take time to build up each country's affordable housebuilding programme to the levels needed. Lessons from the past show that, with government backing to release land at affordable prices and to increase investment, housing associations and councils have the potential to increase the supply of new homes for social rents, and low cost home ownership. In post war years until the 1970s councils regularly built more than 100,000 homes a year. Existing evidence shows that an increase in housebuilding alone would lead to a decrease in the most acute levels of homelessness and be a significant policy lever in ending homelessness for good.

All three national governments are now moving in the right direction. The Welsh Government's recently enhanced targets are an appropriate base on which to grow investment. In Scotland the Government's ambitious targets are adequate to meet the scale of need nationally, but the challenge now is to deliver the right types of affordable housing in the right locations. In England whilst the Government has restarted investing in new social rented housing, it has yet to adopt a target to deliver the step change in supply that is needed to make a real difference to communities.

Getting the right targets in place is a critical first step, one that the Westminster Government must now take as a matter of urgency. The shortfall of homes can't be met overnight – but with bold and ambitious policies, all three national Governments have the capacity to meet this need. To truly get to grips with this crisis and ensure everyone has a safe and stable home, we must act now to solve it.



Jon Sparkes
Chief Executive,
Crisis

Kate Henderson
Chief Executive,
National Housing Federation

Executive Summary

There is an urgent need for more housing that provides people on low incomes with security, decent living conditions and affordable rents. Across Great Britain the need and demand for low-rent housing outstrips supply. This report presents the findings of a study, carried out by Professor Glen Bramley of Heriot-Watt University for Crisis and the National Housing Federation, to estimate the scale of current and future housing need and associated housing requirements. Unlike previous studies there is a specific focus on low-income households and people experiencing homelessness.

The research adds to the existing evidence base on housing need by making an assessment of the existing backlog of unmet housing need and by providing a new methodology for the assessment of housing requirements. It presents unique analysis of housing requirements shaped by the housing outcomes we want to achieve as well as producing estimates driven by the Government's household projections as previous studies have done.

Key findings

- There is currently a backlog of housing need of 4.75 million households across Great Britain (4 million in England). Around 3.66 million households are in housing need and are currently concealed and overcrowded household, those with serious affordability or physical health problems and people living in unsuitable accommodation. In addition, around 333,000 households experiencing core and wider homelessness[1] are in housing need. Another 250,000 older households with suitability needs are part of the backlog and finally 510,000 households are included because they live in poverty after paying their housing costs. (see Table 1.1).

1 Core and wider homelessness definition has been developed by Heriot-Watt and Crisis. Core homelessness refers to people rough sleeping, sleeping in cars, tents, public transport, squatting, hostel residents, people placed in unsuitable temporary accommodation (including bed and breakfast and nightly paid hotels), night and winter shelters, sofa surfers. Wider homelessness extends to people staying with friends and relatives on a longer term basis, people under eviction or notice to quit who can't afford to access the PRS, in other forms of temporary accommodation and those discharged from prisons, hospitals and other state institutions without permanent housing. For more information, see Crisis (2018) *Everybody In: How to end homelessness in Great Britain*, Chapter 5: Homelessness projections.

Table 1.1 Backlog of housing need in Great Britain

Type of housing need/requirement	Number of households in GB (million)	Number of households in England (million)
Housing need including: • Concealed family or concealed single (including nondependent children) wanting to move, • Overcrowding (bedroom standard) • Serious affordability problems based on combination of ratio measures and subjective payment difficulties • Serious self-reported physical condition problems • Accommodation unsuitable for families (e.g. high-rise, no garden/yard)	3.66	3.15
Core and wider homelessness	0.33	0.24
Older households with suitability needs	0.25	0.20
Households whose housing costs are unaffordable	0.51	0.41
Total	**4.75**	**4.00**

Source: UKHLS; Crisis

- The analysis works on the assumption that the large backlog of need cannot be met instantaneously and it will take time to build up a really effective housebuilding programme to address these existing needs plus expected future needs and demands. There the projected levels of supply have been calculated on a 15 year time frame.
- Over 15 years the research has estimated the total level of new housebuilding required is around 340,000 per year for England, 26,000 per year for Scotland, and 14,000 per year for Wales (380,000 for GB). These figures include new social housebuilding per year of 90,000 for England, 5,500 for Scotland and 4,000 for Wales (100,000 across GB), with additional provision per year of 25,000 shared ownership (or equivalent LCHO) for England, 2,500 in Scotland and 30,000 for intermediate affordable rent (30,000 and 33,000 across GB). (see table 1.2)

Table 1.2 New housebuilding requirements in Great Britain based on need

	Total	Social Rent	Shared Ownership	Intermediate rent
England	340,000	90,000	25,000	30,000
Scotland	26,000	5,500	2,500	2,000
Wales	14,000	4,000	1,500	1,500
Great Britain	380,000	100,000	29,000	33,500

- These estimates are derived from employing three partially distinct methodologies: two based on a traditional demographic framework enhanced to reflect affordability, and the other based on a dynamic sub-regional housing market model and consideration of a wide range of key outcome measures, relating to affordability, poverty, housing need and homelessness. Figure 1.1 sets this out in more detail.
- The analysis does not take into account the impact of any rebalancing of the economy in accordance with the ambitions of the industrial strategy.
- Following the work of Barker (2004)[2] and NHPAU (2009)[3], affordability is seen as a key criterion for adapting housing numerical targets away from numbers inherited from previous plans or from demographic projections. However, the modelling shows that much greater adjustments are needed to achieve a meaningful levelling of affordability differences than those proposed by MHCLG in its 2017 planning guidance[4]. If the goal is to make a significant and proportional response to housing need, particularly the most acute needs such as those experiencing core homelessness, quite strongly differentiated housing targets are appropriate.
- Building on previous research, it is recognised that, to reduce core homelessness substantially, additional measures both within housing policy (e.g. full application of homelessness prevention measures and housing led responses) and beyond housing policy (limiting or reversing some welfare reforms/cuts, particularly in relation to the Local Housing Allowance (LHA) freeze) are needed in addition to increasing overall housing supply.

2 Barker, K. (2004) *Review of Housing Supply: Delivering Stability: Securing our Future Housing Needs. Final Report & Recommendations.* London: TSO/H M Treasury
3 National Housing and Planning Advice Unit (NHPAU) (2009) *Affordability Still Matters.* Titchfield: NHPAU.
4 DCLG (Department of Communities and Local Government) (2014) *National Planning Practice Guidance: Assessment of Housing and Economic development Needs*

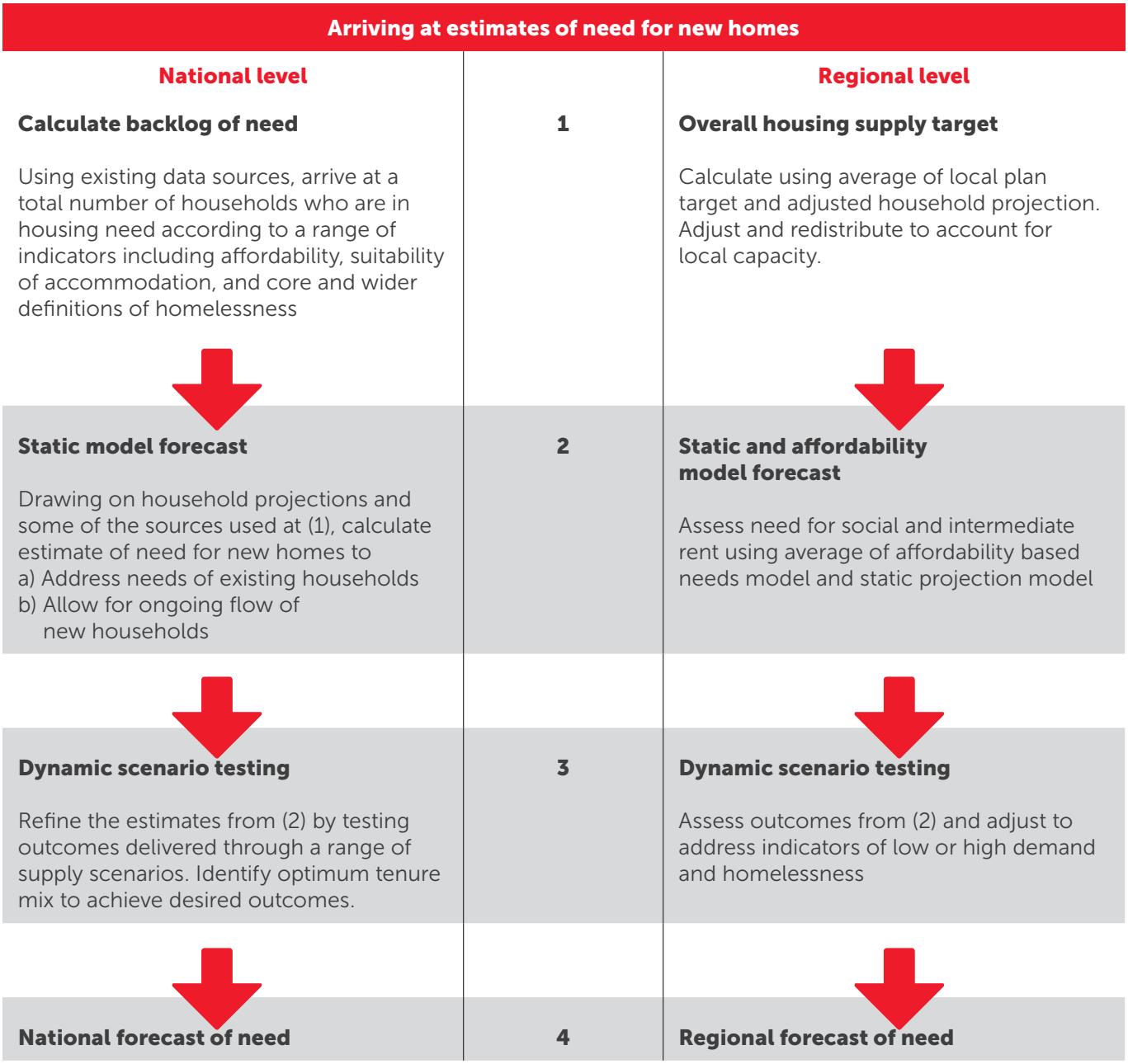
- The emphasis of the study has been on housing requirements and needs, with limited consideration of resources issues and some aspects of feasibility. However, the study has demonstrated that suggested regional targets are consistent with a reasonable interpretation of evidence on land capacity. Other factors which may affect the achievability of these targets depend on levels of subsidy available as well as policies relating to tenure mix. It is anticipated that questions relating to resource requirements, including what proportion of costs can be borne by new developments themselves and the extent of the investment requirement from Government, will be the subject of further analysis in 2019.
- The report provides an assessment of the scale of housing requirements at national level for Wales and Scotland, and at national and regional level for England (Table 1.3). In sum, the findings suggest that England requires more ambitious targets across the board, that Wales would benefit from more investment in affordable housing and its recently enhanced targets are not unreasonable. For Scotland, there are more nuanced findings, suggesting that care should be exercised about the total housing volume target in view of issues of low demand and housing surplus in some areas, and that the balance of the affordable supply programme should probably be shifted somewhat from social renting to intermediate tenures.

Table 1.3 Total, Social and Intermediate Affordable Housing Supply Targets by English Region

English Region	Total	Social rent	Shared ownership	Intermediate rent
North East	6,963	828	400	1,190
Yorkshire & Humberside	18,868	1,795	1,477	2,216
North West	22,574	4,324	3,297	3,288
East Midlands	17,248	1,867	2,202	1,929
West Midlands	21,102	3,129	3,268	2,458
South West	42,171	8,340	3,980	2,540
East of England	46,104	10,999	3,851	3,143
South East	90,179	26,250	6,466	5,319
London	74,464	32,983	2,308	10,523
Total	**339,673**	**90,515**	**27,249**	**32,605**
England headlines (rounded)	340,000	90,000	25,000	30,000

- The study supports the contention that excessive reliance on household projections as a basis for targets is seriously flawed, and other evidence and models need to be brought to bear to arrive at a more appropriate set of targets. It also confirms the widespread perception that housing needs have increased, and current levels of housing supply are inadequate in scale and scope. The geographical distribution of supply will require further debate in the light of any emerging regional development strategy.

Figure 1.1 Summary of research methodology



Introduction

Chapter 1: Introduction

Britain is in the grip of a housing crisis. One of the key drivers of this crisis is a lack of genuinely affordable housing being provided in places where people want and need to live. There is cross-party consensus that Britain needs to build a lot more housing, including affordable housing, to tackle its crises of housing affordability and homelessness. While it is generally accepted that not enough new affordable housing is being built, the extent to which there is clear evidence at national level of the scale of need varies across Great Britain.

In England there is a lack of clarity over exactly how much and what type of affordable housing is needed.

At national level, there are a number of sets of figures already in circulation, but each has shortcomings.

The framework for Objectively Assessed Need laid out by DCLG in September 2017 is widely held to be too blunt an instrument, both in terms of the inputs used and in terms of the outputs. No allowance is made for assessing the level of need for affordable housing beyond an acknowledgement in the overall guidance that such an assessment should be made.

The most widely respected existing set of national figures are those produced by the late Alan Holmans for the Town and Country Planning Association (TCPA) in 2013, and updated by Neil McDonald and Christine Whitehead in 2015. However even these have their own issues; they do not break down below regional level, the second iteration of them does not include an assessment of the need for affordable housing, they are in need of updating, and do not explicitly take account of levels of homelessness in calculating housing need.

At the local level, many local authorities and city regions/sub-regions have carried out – or paid consultants to carry out – Strategic Housing Market Assessments (SHMAs) or Housing Needs Assessments. The methodology which sits behind these varies from area to area, so that meaningful aggregation of these figures is not possible.

In addition to addressing the gap in housing needs evidence for England, the study set out to provide Great

Britain-wide coverage, producing projections at national level also for Scotland and Wales and using a consistent methodology for all three nations.

It is important to note, however, that more comprehensive housing needs evidence already exists in Scotland and Wales. In Scotland, a relatively recent joint study by Sheffield Hallam and others (2015) to identify the scale of affordable housing need concluded that there was a need over the five year term for 12,000 affordable homes per year, partly in reflection of the underperformance of and prospects for market-led development. This represents a high proportion of the overall housing requirement for Scotland at 18,700 homes a year (based on household projections). In Scotland (unlike in England) Government has set a target for the provision of social rent and other affordable housing; to provide 50,000 affordable homes between 2016-2021, of which 35,000 should be for social rent.

In Wales, a Housing Supply Taskforce report of 2015 (drawing on analysis by the late Alan Holmans) proposed an affordable target of around 2,200 homes a year. Subsequently the affordable housing target has been increased to 4,000 homes a year. It is recognised that the 2015 analysis needs updating, and the independent review of affordable housing currently underway is seeking views on how the process of gathering evidence and target setting can be improved.

Given these considerations, it was felt that the time was right for a comprehensive look at the need for new housing, including the need for different types of sub-market housing. In light of gaps in previous studies, the research is taking into consideration the needs of low income households and people experiencing homelessness.

This report presents the findings of a new Great Britain study, carried out by Professor Glen Bramley of Heriot-Watt University for Crisis and the National Housing Federation, to estimate the scale of that need and associated housing requirements. Estimates are provided at national level for England, Scotland and Wales, and at regional level for England.

The study adds to the existing evidence base on housing need by making an assessment of the existing backlog of unmet housing need (See section 2.1) and by providing a new methodology for the assessment of housing requirements. In addition to producing house building estimates driven by the Government's household projections and adjusted to account for affordability, as previous studies have done (See section 2.2), the report also presents an analysis of requirements shaped by desirable housing outcomes (See Figure 2.1).

This additional methodology – the dynamic model - has been developed in part to tackle the "circularity problem" caused by using official trend-based household projections as a starting point. It is well understood that household formation is influenced by economic factors and housing market conditions, as well as by the basic number and age structure of the population. Therefore, the circularity problem is caused by the suppression of household growth through the under-supply of new homes; basing future need calculations on lower growth figures may underestimate the scale of housing requirements. Using trend-based household projections to determine the scale of housing requirements risks reinforcing the effects of historic undersupply.

The additional methodology presented in this report adopts a different approach. It starts from assumptions about future economic growth and population size,[5] and examines the effects of different housing supply scenarios on the outcomes we want to achieve. These outcomes include improvements to housing affordability and other indicators of housing need, reductions in poverty after housing costs, and reductions in homelessness. This report considers the effects of a range of housing supply scenarios, and identifies which scenario delivers the best possible outcomes.

The study estimates are therefore derived using these three partially distinct methodologies in complementary fashion; the first two based on a traditional demographic framework enhanced to reflect affordability, and the other based on a dynamic sub-regional housing market model that considers a range of key outcome measures.

5 The central population assumption here is close to the ONS central population projection at national level at the time of writing. In the full technical report a sensitivity test involving lower population growth is examined.

Housing need and supply

Chapter 2: Housing need and supply in Great Britain

This report presents three distinct components of housing requirements analysis. The first of these was an assessment of the existing backlog of need; the second a "static" assessment of the number of new housing supply needed per year to 2031 and the third an outcomes-based assessment of the level of new housing supply needed per year to 2031. This chapter sets out the methodology and calculation for each stage and presents a range of scenarios before arriving at a final set of figures for GB overall and broken down by England, Scotland and Wales. It also examines the impact of increased supply on levels of homelessness.

2.1 Estimating the overall backlog of need

The starting point for producing the backlog of need estimate was looking at those households identified as being in housing need using the following definition according to Understanding Society survey data:

- Concealed family or concealed single (including nondependent children) wanting to move,
- Overcrowding (bedroom standard)
- Serious affordability problems based on combination of ratio measures and subjective payment difficulties
- Serious self-reported physical condition problems
- Accommodation unsuitable for families (e.g.high-rise, no garden/yard)

The figures in this group have been arrived at by measuring those households who have experienced any one or more of these problems either in the current or previous year. This accounts for 13.8% of all households in the current year (which has been used in the calculation in Table 1.1) or 20.9% counting current or previous year. This data set does not take account of older households with suitability needs - a

further 250,000 households fall into this category and have been added to the total backlog of need (see table 2.1).

Added to this figure are components of core and wider homelessness.[6] A further 330,000 households are added to the total – comprised of those who are rough sleeping, living in cars, tents, public transport, hostels, sofa surfing, squatting and living in non-residential buildings, in unsuitable temporary accommodation, those leaving institutions such as prisons and hospitals, and non-permanent private renters (allowing for double counting).

Another component of the backlog of need are those households whose housing costs are unaffordable, even though they may not be identified in the specific needs above (i.e. those paying more than our norm ratios but not indicating actual immediate difficulties with payment). A broad indicator of this problem would be households in poverty 'After Housing Costs' on the standard UK measure of 60% of the median income. This equates to 17.3% of households across Great Britain. There are an additional 240,000 under-40 households living in the private rented sector (over and above those already counted as in need) who cannot afford it, according to our affordability criteria, and should be able to access social housing, plus another 75,000 who could afford intermediate affordable rents. The equivalent numbers from the older age groups may be of a similar order of magnitude, adding 0.51 million households in total.

Table 2.1 Backlog of housing need in Great Britain

Type of housing need/requirement	Number of households in GB (million)	Number of households in England (million)
Housing need including: • Concealed family or concealed single (including nondependent children) wanting to move, • Overcrowding (bedroom standard) • Serious affordability problems based on combination of ratio measures and subjective payment difficulties • Serious self-reported physical condition problems • Accommodation unsuitable for families (e.g. high-rise, no garden/yard)	3.66	3.15
Core and wider homelessness	0.33	0.24
Older households with suitability needs	0.25	0.2
Households whose housing costs are unaffordable	0.51	0.41
Total	**4.75**	**4**

Source: UKHLS; Crisis

6 Crisis (2018) *Everybody In: How to end homelessness in Great Britain*, Chapter 5: Homelessness projections.

Looking at how affordability has been addressed in the model, for rental housing the central, primary criterion of affordability is a ratio of housing cost to gross income of 27.5% or less. A secondary criterion is that residual income after tax and housing cost should exceed a threshold, related to standard UK relative low income poverty definition (60% of median net equivalised income AHC). For house purchase the primary criterion is expressed as a lending multiplier of 4 times gross income (single earner), which can be shown to be compatible with the 27.5% standard on prudent assumptions about repayment and interest rates. Examining recent evidence shows that lending above 90% LTV is rare; therefore it is necessary to make additional assumptions about access to or saving for deposit.[7] Allowance should be made for a proportion of First Time Buyers (FTBs) having access to significant sums of family wealth to meet deposits exceeding 10%. Affordability of different tenures should also be assessed for different household composition/size categories, assuming that a majority of market and intermediate demand, and a significant proportion of social rented sector demand, would require more than the minimum bedroom standard allowance, and that sharing is not appropriate for a large/significant proportion of single people (in the social sector).

The income and household composition profile of new demand/need is based primarily on the profile of households aged under 40, with some allowance for additional formation from concealed households.

An analysis of affordability has been conducted using data on households where the head is aged under-40 in the 'Understanding Society' Survey (UKHLS) for 2015/16. This groups households into one of four bands defined by the income thresholds for buying at market price, renting at market rent, renting at 'intermediate rent', and social renting (the remainder). Shared ownership effectively overlaps with the second band, people able to afford market rent but not market purchase. The under-40 age grouping is chosen to be broadly representative of the age range within which people form new households, settle down and attempt to find mainstream housing solutions[8]. The modifications to 'ability to buy' relating to (a) saving for deposits, and (b) accessing larger lumps of wealth, are brought into the picture at a second stage of analysis.

Figure 2.2 indicates that overall 45% of this cohort of younger households can afford to buy, based on their income and the norms/standards for affordability and mortgage lending. A further 14% can afford market renting. Beyond that, a further 8% could afford Intermediate Renting, leaving a sizeable group (33%) for whom social renting is the only reasonable option based on our affordability norms.

7 There may be a link between this issue and the issue of the role/function and rent level of intermediate rental products, and/or the issue of private rent regulation.

8 In the ID2015 study for DCLG it was argued, and accepted, that under-40 was an appropriate age bracket for this purpose, in recognition of the considerable evidence of delayed household formation and first home purchase over the last decade and a half.

Table 2.2 Affordability bands by existing tenure of all under-40 households by broad region of England, 2015
Part (a) percent of total in each region/tenure)

Broad	Affordability	Current Tenure			
Region	Band	Own	Social	Priv Rent	All Hhd<40
North	Can Buy	75%	23%	43%	54%
	Mkt Rent	4%	28%	5%	10%
	Intermed Rent	3%	4%	4%	4%
	Social Rent	17%	45%	47%	33%
Total		**100%**	**100%**	**100%**	**100%**
Mids	Can Buy	79%	22%	43%	54%
	Mkt Rent	4%	34%	11%	13%
	Intermed Rent	3%	0%	9%	4%
	Social Rent	14%	44%	37%	29%
Total		**100%**	**100%**	**100%**	**100%**
South	Can Buy	65%	9%	36%	44%
	Mkt Rent	9%	28%	13%	14%
	Intermed Rent	6%	8%	13%	9%
	Social Rent	21%	54%	38%	33%
Total		**100%**	**100%**	**100%**	**100%**
GLA	Can Buy	42%	1%	13%	19%
	Mkt Rent	27%	44%	10%	22%
	Intermed Rent	11%	13%	30%	21%
	Social Rent	20%	41%	47%	39%
Total		**100%**	**100%**	**100%**	**100%**
England	Can Buy	69%	15%	34%	45%
	Mkt Rent	8%	32%	10%	14%
	Intermed Rent	5%	6%	14%	8%
	Social Rent	18%	47%	42%	33%
Total		**100%**	**100%**	**100%**	**100%**

2.2 Assessing the level of new housing supply needed: Static assessment

This component of the analysis follows the mainstream tradition of housing needs/requirements assessments by taking household projections as a starting point, modifying these in various ways and then combining the results with information on affordability and existing housing needs. This approach is characterised as 'static' because it does not assume or represent any changes in market conditions (particularly 'affordability'), nor any adaptive behavioural changes in response to changed conditions, including enhanced supply. These more dynamic aspects are better captured by the model described in the following section.

This static approach is focused in particular on two groups of households;

A. the existing stock of 'under-40' households and
B. the ongoing flow of 'new' households.

These groups represent the cohort of households making new demands on the housing system and often finding difficulty becoming established.

Extensive use of data derived from the analysis of the recent UKHLS survey data underpins this part of the analysis where households are reallocated into more appropriate (affordable) tenure options. This is first done separately for the two groups, and then combined by converting each to an annual flow, dividing A. by 15 and B. by 5. (15 as an appropriate time frame corresponding to the programme period 2016-31, 5 because our new household data is based on five years pooled). The reallocation applies the following rules/assumptions.

Reallocation rules

1. A small proportion (3%) of existing owners who are classified in the lowest two affordability bands are deemed to be unsustainable owners and are reallocated into social rented housing.
2. 60% of social renters and 75% of private renters who have enough income to buy, reduced by the proportion estimated to be unable to save a deposit in 5 years (averaging 16% but varying by region), are reallocated to owner occupation.
3. 10% of social renters and of private renters who have enough income to buy (at market level), reduced by the proportion estimated to be unable to save a deposit in 5 years, are allocated into shared ownership
4. The same number as in 3) above are allocated into Intermediate Rent
5. 50% of social and of private renters with enough income to rent at market rates, but not to buy, are allocated to shared ownership
6. 50% of social and private renters with enough income to rent at intermediate rent levels are allocated to intermediate rent.
7. 75% of private renters whose affordability band indicates social renting and who are in need are reallocated from private renting, 80% to social rent and 20% to intermediate rent.

These rules have been created to meet the maximum end of what might be considered feasible or reasonable. At this point the model is seeking to generate a comprehensive picture of what would be needed to achieve a good match between incomes, needs and actual housing tenure position, for both existing and expected newly forming households.

This analysis is then combined with key numbers governing the overall growth in housing requirements. It starts from the official household projections and then takes account of 'suppressed household formation'. In this 'static' approach, an assumption is made about a level of suppressed household growth which would re-emerge given a better level of supply and affordability. The decline for the younger adults observed since 1992 is reversed differentially according to the regional data, and a modest additional growth is added in headship for this group, equal to the increase observed in the least pressured region of England (East Midlands) between 1992 and 2002. The effect is to increase annual household growth in England by 69,000, from 216,000 (the Government's official household projection) to 285,000.

Table 2.3 below shows the build up of the overall housing numbers for England following this approach. The first row shows the 2014-based household projection average growth number (216,000 p a), and this is followed by the addition made to reflect suppressed household formation, as described above (totalling nearly 69,000). Certain other additions are also required when translating this into a new dwellings number.

Table 2.3 Enhancements to Household Projection Numbers as basis for Static Housing Requirements Projection, England 2016-2031 (Number per annum)

England	Top down Inputs
Household projection	216,284
Additional suppressed household formation	68,884
Demolitions to reflect baseline (10k) plus estate renewal/conditions (20k)	32,000
Need to increase ave vacancy rate (+1.5%pt) to enable more movement	22,000
Recommended new completions (inc net conv/CoU) number	339,169

Source: Author's analysis of household projections and household headship data in the Labour Force Surveys 1992-2016 as discussed in Fitzpatrick et al (2018, Section 4)

Firstly, some allowance needs to be made for *demolitions*. Recent data for England[9] show a typical annual number of demolitions of 10,000, which is quite small for a country with 23.5 million dwellings. It is assumed that this will need to be increased substantially to provide for (a) the larger anticipated programme of large scale estate renewals, (b) dealing with some of the worst cases highlighted by the Grenfell tragedy, and (c) dealing with some housing in poor condition, particularly in low demand areas. It is further assumed that there would need to be some increase in the assumed *vacancy rate*. Vacancy rates in England have been running at very low levels[10] and there is an argument for increasing this to enable more movement and flexibility in the system. It is also inevitable that with a much bigger housing supply programme, vacancies will rise anyway, so this is necessary on accounting grounds. The table also contains provision to allow a further contingency for changes in migration, relative to what has been assumed in the projections, which could be positive or negative – no contingency is included in the baseline assessment. Even without that, however, it can be seen that the new supply requirement for England is actually just under 340,000, which is well in excess of the 216,000 basic household projection.[11]

Table 2.3 below shows how the 'reallocation' of new and existing households between tenures is combined with the household growth and dwelling requirement information, for England as a whole.

The first two rows show the net effects of initial tenure destinations of existing and new households plus the effects of progressively reallocating them to more appropriate tenures over the plan period – the first row total is the gross new household formation experienced over the last 5 years; the second row is the enhanced household formation derived as described above. The next component of household change to be accounted for is migration (net, in household equivalent terms). The number shown (69,000 households) is the authors interpretation of the underlying assumptions of ONS in

9 MoHCLG Live Table 123 on net additional dwellings

10 MoHCLG Live Table 615 shows vacancies falling from 783,000 (3.49% of stock) in 2008 to 590,000 (2.51% of stock) in 2016

11 These were the projections available at the time the research was undertaken. Shortly before going to press with this report new projections were published by ONS, showing a lower level of prospective household growth, for various reasons which are discussed critically in the accompanying longer technical report.

their population projections (namely that international net in-migration will remain significantly positive, albeit at lower levels than seen in the last decade or so after UK leaves the EU). The tenure distribution is based on that observed for recent migrants in UKHLS. The next item is household dissolutions, a very important and neglected subject in the study of household demographics. Essentially quite a lot of new housing requirements will be met by stock released through older households dissolving (through death, institutionalisation, or moving in with others), and the predictions here are based on ages of existing household by tenure, with the total level essentially a balancing item with net household growth. This measure of dissolutions refers to long term exits from the housing system, rather than short term 'churn' in the middle years of life, for example associated with relationship changes (for further discussion see Bramley 2010b[12]). Finally, the allocation of demolitions and vacancies across the tenures is a judgement, partly informed by expectations around estate renewal programmes.

Table 2.5 breaks the bottom line dwelling requirements by tenure down across four broad regions of England, showing Wales and Scotland as well for comparison.

Table 2.4 Baseline Static Projection of Housing Requirements by Component of Change and Tenure - England 2016-2031 (number per annum)

	England		Indicative target	Detailed outcome	Private Sector	Social Rent	Shared Own'shp	Intermed Rent
	New households (gross):	Under 40s "half-in-half" reallocation	370,038	368,691	239,169	89,645	17,595	22,282
+		Marginal add'l new + realloc	68,884	67,412	43,307	19,154	1,612	3,338
+	Migrants net intl and domestic		68,999	66,273	47,834	11,679	2,265	4,496
-	Dissolutions (balancing)		212,753	219,163	175,120	44,043	0	0
=	Enhanced net household growth		285,169	283,213	155,190	76,435	21,472	30,116
+	Demolitions		32,000	32,000	16,000	16,000	0	0
+	Vacancies		22,000	22,300	14,400	5,000	1,000	1,900
=	Total new dwellings		341,151	337,513	185,590	97,435	22,472	32,016
	Quotas					**29%**	**7%**	**9%**

Source: Authors' calculations based on analysis of *Understanding Society*, affordability analyses, reallocation rules as described in text and other estimates also discussed in text.

12 Bramley, G., Pawson, H., Pleace, N., Watkins, D. & Pleace, N. (2010) *Estimating Housing Need*. London: Department for Communities and Local Government.)

Table 2.5 Baseline Static Projection of Housing Requirements by Tenure and Broad Region and Country, Great Britain 2016-2031 (number per annum)

Numbers (annual)	Total Dwellings	Private Sector	Social Rent	Shared Own'shp	Intermed Rent	All Affordable
North	68,992	38,354	19,988	4,379	6,271	30,638
Midlands	56,030	31,034	17,849	3,889	3,258	24,996
South	90,810	43,119	27,211	8,650	11,830	47,691
Gtr London	121,682	73,083	32,387	5,555	10,657	48,599
England total	337,513	185,590	97,435	22,472	32,016	151,924
Wales	12,951	6,184	4,514	848	1,405	6,767
Scotland	22,304	11,296	5,088	3,086	2,834	11,008
GB Total	**372,769**	**203,070**	**107,037**	**26,406**	**36,256**	**169,698**

It is necessary to reiterate that this is a static model which only gives a first view of housing needs and requirements, albeit one which is based on an analysis of *current* affordability and a reasonable interpretation of demographic projections and prospects. What it cannot do is provide a full account of all of the likely adjustments in housing markets, migration, household formation, housing turnover (including social sector relets) which would result from this supply scenario, taken in conjunction with reasonable expectations of future economic growth and change. A sustained large increase in supply is likely to have a substantial impact on affordability and on all of these factors over a 15 year time frame.

All of these considerations are considered in using a dynamic model to examine a balanced array of outcomes in the next part of the analysis.

2.3 Assessing the level of new housing supply needed: Dynamic outcomes-based assessment to 2031

As noted in the previous section, the methodology employed in this element of the work makes an important departure from many earlier studies. Whereas other housing requirements studies, such as the DCLG[13] and TCPA[14] work, have household projection figures at their core, this new approach focuses on the outcomes which we wish to achieve.

While household projections are still used, they are not as central to this new method. As noted in the introduction to this report, one of the key reasons for this is that the projections themselves are based on existing trends; this raises the very real possibility of the effects of historic under-supply of new housing being perpetuated. If household growth has been artificially suppressed by the under-supply of new housing, then basing future need calculations on those lower growth figures will by necessity under-estimate that need. Indeed, this does appear to have happened between the two

13 Department for Communities and Local Government (2017) *Planning for the right homes in the right places: consultation proposals*. London: DCLG. www.gov.uk/dclg

14 Holmans, A. (2001) *Housing Demand and Need in England 1996-2016*. ISBN 0 902797 97 2. London: Town and Country Planning Association/National Housing Federation; McDonald, N. & Whitehead, C. (2015) *New Estimates of Housing Requirements in England, 2012 to 2037*. Town & Country Planning Tomorrow Series Paper No. 17. London: Town & Country Planning Association.

TCPA papers[15], the annual need figure dropping from 243,000 to 222,000.[16]

Central to the approach employed by Heriot Watt is the Sub-Regional Housing Market Model. This model allows the forecasting of the direct and indirect effects of supply on needs and affordability. However, rather than simply treating need as a static figure, the model allows for behavioural feedback effects. So for example, while additional housing supply can contribute directly to tackling need and affordability problems, it can also have the effect of stimulating additional household formation, through increased availability and affordability.

The model was used to run a sequence of scenarios in order to explore how and to what extent expanding different elements of housing supply in different regions would contribute to a range of desired outcomes. The housebuilding requirements identified by the study are considered to deliver the optimal range of outcomes across a range of indicators (list of indicators outlined in Figure 2.1). As previously stated the unique element of this study is basing the analysis on the outcomes we wish to achieve as well as overall housing requirements.

15 Ibid
16 There is an even steeper fall in the latest projections from ONS, which are critically discussed in the full technical report.

Figure 2.1 Key outcome indicators reported by the model

Supply Numbers	Total new housebuilding completions, number per year averaged over preceding 5 years, 2016 and 2031.
	New social housing / intermediate rent / shared ownership completions
Demographics	Number of households total
	Household growth, number per year averaged over preceding 5 years
Affordability	Affordability to buy, percent of younger households able to afford to buy, adjusted for saving for deposit and access to larger lumps of wealth
	Affordability to rent in market, percent of younger households
	Poverty after housing costs, percent of all households with less than 60% median net equivalent income after housing costs
	Financial difficulties, percent of households with self-reported difficulties maintaining housing payments
Tenure	Younger homeownership: percent of Under-40 households in owner occupation
	General homeownership: percent of all households in owner occupation
	Private renting: percent of all households in private renting
Housing need	Concealed/sharing households as percent of all households
	Backlog housing needs – percent of all households with one or more of affordability problems, overcrowding, concealed, sharing or unsuitable housing
	Core homelessness: number of households estimated to be rough sleeping or in similar situations, or in hostels, unsuitable temporary accommodation or sofa-surfing
	Wider homelessness (households who are statutorily homeless but not in 'core' group above, plus other households at significant risk of falling into homelessness in coming year).
	Annual net new need for affordable housing; the number of households newly forming, plus half of net migrant households to area, who are unable to afford market rent, less the annual flow of relets of social housing (excluding transfers)
	Chances of rehousing: the annual flow of lettings of social housing to new tenants as a percentage of the backlog housing need.
Low demand	Extent of 'excess' private housing vacancies (% over 6%)
	Proportion of LAs where social rent relet rate above 6%
	Proportion of LAs where house prices are significantly (>10%) below replacement build cost
	We also report in the text model predictions of numbers of demolitions based on a proportion of 'excess vacancies' at HMA level

It should be noted for the purposes of the study affordability and housing need are the primary outcomes we wish to influence. On the basis of the outcomes used in the modelling a number of scenarios are analysed and reported on in the rest of the chapter.

2.31 Scenario outcomes

Baseline

Initially a 'baseline' scenario was run (see Table 2.6). This was intended to represent "carrying on as we are" as at 2016/17.

Table 2.6 Key outcomes in baseline scenario, England 2016-31

Baseline 18 April 2018				
Summary Outcomes				Diff %
England			*Change %*	*vs baseline*
	2016	**2031**	**2016-31**	**in 2031**
Total New Housebuilding	114,338	240,151	110.00%	0.20%
New Social Housebuilding	16,840	28,165	67.30%	1.20%
Number of Households	22,920,530	25,617,089	11.80%	0.00%
Household Growth	214,154	190,030	-11.30%	0.10%
Affordability to Buy %	43.4	38.4	-11.70%	0.00%
Affordability to Rent %	62.3	60.1	-3.50%	0.00%
Owner Occ under 40 %	48.7	48.4	-0.80%	0.00%
Owner Occ all %	66.7	62.2	-6.80%	0.00%
Private Rent all %	18.4	22.2	20.90%	0.00%
Rel Poverty AHC %	17.3	18.2	5.20%	19.60%
Financial Difficulties %	12.2	13.1	7.50%	0.00%
Concealed/sharing hhd %	4.6	5	9.10%	-0.10%
Backlog Housing Need	2,108,064	2,394,219	13.60%	-0.10%
Wider homeless	904,325	981,334	8.50%	0.00%
Core homeless	137,600	180,100	30.90%	-5.70%
Annual net new need AH	77,403	107,358	38.70%	-0.40%
Chance of Rehousing %	6.9	6.2	-10.20%	0.60%
Low Demand Indicators	2016	2031	Change %	Diff vs baseline
HMAs Excess Vacancies (>6%)	2	39	1850.00%	66.70%
HMAs High Relets (>6%)	16	15	-6.30%	26.70%
HMAs Price< Cost	55	2	-96.40%	100.00%

Note: Supply and other policy assumptions as at 2016-17. Total new build (England) rises from 114,000 to 240,000 p.a. by 2027-31 with distribution reflecting post-2010 localist planning system numbers. Social rented output rising from 17,000 to 28,000 with distribution partly pro rata past output and partly pro rata new private build. LCHO output 57% of social rent number.

Following this a number of different scenarios were run through the model, and their effects expressed in terms of their difference to the baseline. The housebuilding requirement numbers tested under each scenario are summarised in Table 2.7. These scenarios are described in more detail in the Appendix 1.

Scenario 1 – Large increase in general housing supply

The first alternative scenario considered is one where the *general supply of housing* is increased, without particular regard to tenure or affordable housing, essentially through raising the 'planning numbers'. The basis for doing this is to use the new target numbers issued by MHCLG in autumn 2017.

Scenario 2 – Increasing social housing

This scenario is one where the *supply of social housing* is substantially increased as well, along with general new supply.

Scenario 3 – South East focus

This scenario is a variant on scenarios 1 & 2, where we reflect some 'good planning' arguments to shift the emphasis in enhanced growth somewhat from London to the rest of the South of England, with a particular emphasis on a set of 'growth areas' situated in the South East and East regions. The overall social and private housing numbers are similar to the previous scenario.

Scenario 4 – Targeting homelessness

Housing supply is not the only way of addressing problems of housing need. At this point we illustrate this by drawing in a package of measures identified in the parallel research for Crisis on homelessness projections (Bramley 2018 forthcoming). The measures added to the mix at this point include the following

- Ending of welfare cuts, including the LHA freeze
- Maximal application of prevention measures by all local authorities
- Continued diversification of housing models to address homelessness

Scenario 5 – Targeted social housing

One further scenario is reported in this sequence, building on those just described. The key difference in this case is that the additional new social rented housing is targeted to particular localities on the basis of needs. The need indicator developed for this purpose may be described as a 'classic affordability-based needs model', similar to those used by the author in studies in the early 2000s, and reflected in the 2000 edition of the DETR Guidance to local authorities on Local Housing Needs Assessment. This is also part of the basis the local need targets developed further below.

Scenario 6 – High social, wider regional spread

This scenario is designed to achieve 100,000 new social housing units in England as part of a programme of 375,000 in total. In this scenario, for comparability, we keep in place the specific non-supply measures geared to reducing core homelessness, as described above, but the increased supply is essentially a proportional expansion on past levels and plans, rather than the targeted strategy.

Scenario 7 – South East focus, targeted social

In this scenario the social housing output is 85,000 (200% higher), with total new build at 360,000 (50% higher); overall planning numbers are boosted particularly in the South of England and social housing is targeted according to the needs formula, and the other homelessness reduction measures are included.

Scenario 8 – Less strong regional, high social

This scenario goes for a slightly higher number with somewhat less geographical targeting than scenario 7. This was recommended as the preferred scenario based on comparison with those reported above. Table 2.8 shows the key outcome summary table, which may be compared with Table 2.6 above.

It can be seen from Table 2.8 that this scenario achieves moderate improvements in affordability to buy, substantial reductions in after housing costs poverty, financial difficulties and in backlog housing need, very large reductions in core homelessness and the annual net new need flow of households, while doubling the changes of rehousing for households in need. Regional inequalities in most indicators are reduced, with substantial reductions in the case of affordability, concealed/sharing households, backlog need, core homelessness and chances of rehousing.

With the extension of the analysis and target-setting to the regional level across England, some slight changes result in these outcomes, as reported in Appendix A, Table A.6.

Table 2.7 Housing Requirements for all scenarios by tenure for England 2016-31 (number per annum)

Scenario	Annual Numbers for England (thousands per year)				
	Total	Private	SR	SO/LCHO	IR
Static Projection	338	186	97	22	32
Dynamic Baseline Scenario	240	180	28	16	16
Scenario 1 – Large increase in general housing supply	303	231	34	19	19
Scenario 2 - Increasing social housing	347	242	65	20	20
Scenario 3 – South East focus	344	239	65	20	20
Scenario 4 - Targeting homelessness	344	239	65	20	20
Scenario 5 – Targeted social housing	354	241	71	21	21
Scenario 6 – High social, wider regional spread	375	214	101	30	30
Scenario 7 – South East focus, targeted social	361	224	85	26	26
Scenario 8 – Less strong regional, high social	343	198	91	27	27

Table 2.8 Key outcome differences in scenario of relatively large increase in general housing with 91,000 social housing units, less strongly geographically targeted, plus key homelessness related measures, England 2016-31

Summary Outcomes			Difference in Change %	Change % in regional inequality
England				
03-May-18	2016	2031	2016-31	2031
Total New Housebuilding	8.10%	42.90%	67.50%	
New Social Housebuilding	37.10%	222.80%	226.50%	
Number of Households	0.20%	2.30%	2.40%	
Household Growth	3.70%	25.30%	18.50%	
Affordability to Buy %	-0.50%	4.80%	4.80%	-67.20%
Affordability to Rent %	-0.10%	0.30%	0.40%	-29.30%
Owner Occ under 40 %	0.90%	0.60%	-0.30%	-3.50%
Owner Occ all %	0.20%	-1.20%	-1.20%	-1.20%
Private Rent all %	-0.30%	-0.20%	0.10%	
Rel Poverty AHC %	-0.30%	-18.60%	-19.20%	-4.80%
Financial Difficulties %	-0.20%	-11.30%	-12.00%	-7.40%
Concealed/sharing hhd %	1.10%	-10.30%	-12.20%	-64.10%
Backlog Housing Need	-0.30%	-24.40%	-27.30%	-50.30%
Wider homeless	-0.20%	-8.30%	-8.80%	
Core homeless	-0.20%	-55.50%	-72.50%	-42.00%
Annual net new need AH	-3.20%	-56.70%	-76.60%	
Chance of Rehousing %	8.40%	118.40%	91.60%	-59.70%
Low Demand Indicators	2016	2031	Change %	
HMAs Excess Vacancies (>6%)	0.00%	87.20%	1700.00%	
HMAs High Relets (>6%)	7.10%	42.90%	33.30%	
HMAs Price< Cost	1.80%	0.00%	-0.10%	

Some key findings from this analysis may be highlighted. It is necessary to increase planning permissions by substantially more than the target increase in output to achieve the desired change in completions, given the current structure and operation of the housebuilding industry. Scenario 1 (and the other scenarios) would improve affordability of home-ownership, particularly in London and the South East, and to a lesser extent the affordability of renting, reducing regional disparities in both. There would be relatively small reductions in poverty, housing needs and wider homelessness, with somewhat more impact on core homelessness and the chances of people in need getting rehoused, with reductions in regional disparities in some indicators. These impacts particularly on housing need and rehousing prospects, would be improved in Scenario 2 with increased social rented supply. Scenario 3 with its South East emphasis would improve most need indicators further, but not core homelessness. However, Scenario

4 which brings in other measures (e.g. on welfare, prevention) to address homelessness has a bigger impact on that. Scenario 5, which targets social housing more, leads to a further reduction in regional inequalities in housing need outcomes, while making a modest contribution to reducing the average level of some of these.

Scenario 6 tests further increase in social renting with a wider regional spread, but shows a mixed picture across the indicators, with some gains on average scores but less reduction of regional inequality. It also shows more significant evidence of low demand issues emerging on a wider scale towards the end of the period. The final two strategies in this table show a slight easing back in numbers and slightly more or slightly less geographical targeting. The last of these (Scenario 8) appeared to be the most optimal in this higher level testing. However the final recommended set of targets were derived from a more detailed working through of the implications at local authority level.

We expected to find that increased overall supply would ease affordability and somewhat reduce the need for social rented housing compared with that shown in the static projection (table 2.4). This does seem to be the case, but the extent of the reduction in requirements for social housing is also affected by the increased household formation released by enhanced supply.

The analysis for England demonstrates that increasing the supply of social rented housing to around 85,000 to 90,000 homes per annum, with a degree of targeting towards areas of greatest need, as part of a generous overall housing supply (circa 340-350,000) produces optimal outcomes compared with other scenarios. Increasing the supply of social rent beyond this level produces less favourable outcomes, and in particular a rapid escalation and spread of low demand problems.

Table 2.9 Comparison of Selected Target Numbers by Tenure and Country, 2016-31.

Country	Basis for targets	Total Dwellings	Private Sector	Social Rent	Shared Own'shp	Intermed Rent	All Affordable
Wales	Govt targets	9,700	5,700	2,600	1,400		4,000
	Actual	7,810	5,410	1,600	400*	400*	2,500
	Static projection	12,951	6,184	4,514	848	1,405	6,767
	Scenario 5, targeted social	12,232	8,929	1,838	551	914	3,303
	Scenario 8, high social	18,064	9,954	4,513	1,354	2,243	8,110
	Suggested	14,000	7,500	4,000	1,000	1,500	6,500
Scotland	Govt Targets	18,700	8,700	7,000	1,500	1,500	10,000
	Actual	16,498	12,576	3,920	1,860	890	6,670
	Static projection	22,304	11,296	5,088	3,086	2,834	11,008
	Scenario 5, targeted social	36,016	25,506	6,671	2,001	1,838	10,510
	Scenario 8, high social	34,367	23,192	7,093	2,128	1,954	11,175
	Suggested	26,000	16,000	5,500	2,500	2,000	10,000

Scotland and Wales

The outcomes of alternative supply scenarios have also been analysed for Scotland and Wales (Tables 2.9 and 2.10). The scenarios tested are comparable with Scenarios 5 and 8 from the England analysis. The scope of the scenario testing in Scotland and Wales is more limited than that undertaken for England, having been constrained primarily by differences in data availability at housing market level.

For Scotland there are some improvements in outcomes relating to housing needs associated with both the targeted and higher overall/social housing supply scenarios, but these are relatively modest. On the other hand, indicators of low demand are more prevalent in the higher scenario, with excess vacancies affecting three out of eight Housing Market Areas, excess relets affecting five, and house prices below replacement cost in one. For this reason, the suggested social rent target for Scotland, at 5,500 homes, is lower than those tested in the high and targeted supply scenarios, and lower also than the social rent target set by the Scottish Government. The recommended overall affordable housing target of 10,000 is, however, the same as the current Government target, albeit with a rebalancing of the ratio of social rent to intermediate provision when compared with current targets.

For Wales the higher overall/social rent scenario is more favourable in its outcomes. It is projected to deliver improvements in affordability to buy and to rent, as well as in relation to homelessness and chances of rehousing. There is, however, evidence of an overshoot on annual net need and excess relets in some Housing Market Areas. As a consequence, the recommended targets tend towards the second scenario with a social rent target of 4,000 homes, and an overall affordable target of 6,500.

2.32 Impact on homelessness

One of the objectives of the study is to consider the impact of housing supply on the incidence of homelessness.

Homeless people face increased barriers gaining access to social housing, in part because the supply of lettings and new social housing is insufficient to meet the scale of housing need.

A separate study for Crisis by Bramley shows that net flow of households experiencing core homelessness in 2016 was 267,000 in England.

Table 2.10 shows the modelled relationship between the estimated annual flow of core homelessness and the forecast number of social rented lettings by broad region/country over time, based on achieving the housebuilding levels in Table 2.9.It should be noted that Table 2.10 does not present assumptions about the actual proportion of social lettings to homeless people, but instead illustrates the relationship between the two. The table confirms that the position is very adverse in 2016; only in Wales, Scotland, and potentially the North of England, are there enough lettings to house the core homeless, irrespective of current access barriers or the wider range of needs met in the social rented housing stock. By 2026 additional supply and lettings combine with forecast fall in numbers (also affected by modelling more favourable welfare, prevention and other measures) to bring all of the numbers below 100% and the GB average to 70%.

There is a further improvement to 2031, by which time the GB average is 60%, and the London figure has fallen below that at 55%. With the proposed housebuilding programme above, by 2031 there would be 274,000 new lettings in social housing with a flow of 160,000 core homeless households.

Building a lot more social housing clearly makes it much more possible for homeless households to be rehoused in social rented housing where this is most appropriate[17]. It also contributes to a wider programme which will help to prevent and reduce homelessness by providing more housing opportunities and better affordability in the market in general.

Table 2.10 Core homeless annual flow of cases as percentage of social rented lettings under high supply scenario by broad region and year

Broad Region and Country	2016	2021	2026	2031	2041
North	91%	113%	77%	79%	70%
Midlands	111%	104%	68%	63%	50%
South	301%	131%	68%	50%	36%
G London +	804%	165%	93%	55%	48%
Wales	48%	63%	42%	51%	37%
Scotland	42%	37%	34%	30%	23%
England	194%	138%	84%	70%	56%
GB	142%	104%	70%	60%	47%

17 Experience in Scotland suggests that, with a favourable supply scenario and a relatively inclusive homelessness regime, the proportion of statutory homeless applicants actually rehoused in social renting is about 61%

Regional analysis

Chapter 3: Regional analysis

In this chapter we take the analysis to the regional level. This is done by building up analysis from a local authority and housing market area level. For this report regional analysis has been conducted for England only.

In taking the analysis to this level, there are broadly two key challenges:

- Finding and utilising data which can at least approximately replicate the key variables needed to estimate housing needs at this lower geographic scale
- Adapting models developed at a higher level to operate at this scale, and/or appropriating other models which are based at a lower level to answer the key research questions

The modelling step-by-step

The analysis used here derives from three analytically distinct models, although in practice significant elements within these models may be common across two or more of the differing model frameworks. It will be noted – as shown in the diagram in Chapter 2 [Figure 1.1] - that this process is parallel to, and shares elements with, the process by which the national figures were arrived at.

Model 1 is the 'Affordability-based local housing needs model' derived from the work of Bramley et al (2002, 2005, 2006). This uses local authority level data sources to estimate the annual need for additional social rented and affordable housing units, generally as a snapshot at a point in time. It does not independently assess the overall requirement for total new housing provision but may share estimates of this with other models. Similarly, application to future points in time will require forecasts of change in key variables like house prices and incomes, which may be imported from another model such as our 'dynamic' sub-regional model 3 – however, in this application we mainly use base period estimates for 2015.

The essential formula to summarise model 1 is as follows:

The net need for additional units of social/affordable housing each year is equal to
The proportion of younger (<40) households unable to afford to buy or rent in the market
Times

The average number of new households forming each year (gross household formation), *plus* a proportion (one-third) of net migration in household equivalent
Plus
A quota (in this study 1/15th)[18] of the estimated backlog of households with existing housing needs
Minus
Net relets of social (affordable) housing units per year

A key feature of Model 1 is that the net additional need (on given assumptions) may be negative, in which case it may be set at zero (at least at HMA level, after allowing for some movement between LAs). We also reduce the requirement for intermediate tenures if there is an indicated surplus of social rented lettings.

Model 2 is the 'Static model', which entails adjusting demographic household projections and 're-allocating' households between tenures on the basis of affordability norms. The direct estimation of these reallocations can only be performed at a broad regional level (broader than the regions we are interested in) using data directly derived from UKHLS. Therefore it is necessary to go through an indirect estimation process to get down from the national to the local level, using information or estimates available at the local level on (a) tenure shares and (b) affordability profiles of younger households. These affordability profiles, based on market prices/rents and 'modelled' household income distributions, are effectively shared with Model 1. Some of the demographic numbers, particularly estimates of gross new household formation, may also be shared with Model 1.

This model is essentially the same in concept as the static model reported earlier.
The basic formula for model 2 is as follows:

Number of net additional households in tenure (3 cats, Own/SR/PR)
Equals
Number of new households forming into that tenure
Plus or minus
The net re-allocation of new households to most appropriate tenure
Plus or minus
The net re-allocation of existing households aged under 40 to most appropriate tenure, phased over plan period
Plus or minus
The share of net migrant households associated with that tenure
Minus
The estimated number of households dissolving through old age or infirmity or moves in with others in that tenure
Plus
Estimated number of demolitions expected in that tenure
Plus
Estimated additional vacancy reserve required or expected in that tenure

Model 3 is the 'Dynamic model', namely an econometrically-based sub-regional housing market model (SRHMM) designed to forecast outcomes of the housing system in annual steps over 25 forward years, although in this study we focus mainly on the 15-year period to 2031. The model runs at the 'sub-regional' geographic level of 114 Housing Market Areas (HMAs, 102 in England). Therefore, output information (key housing numbers and outcomes)

18 The rationale for the quota is that backlog needs can only practically be addressed over a planning period, which in the case of this study is 15 years. In practice the backlog is not a fixed population but subject to considerable turnover, and households in more urgent need will typically be dealt with more quickly than the average rate of rehousing.

needs to be disaggregated from this to the LA level and compared with targets set at the lower level, while conversely targets need to be aggregated up to HMA level and fed into the SRHMM to generate the forecasts. Proposed scenarios are assessed in terms of their performance in generating more desirable levels (and disparities) in a basket of outcome indicators.

Models 1 and 2 tend to produce somewhat differing patterns of results. Model 1 uses more locally-based information (particularly on backlog and relets) and tends to produce a more sharply differentiated picture, wherein substantial numbers of authorities are shown as having no (i.e. negative) additional needs for some social renting (and possibly for shared ownership), while at the other extreme some authorities appear to have 'impossibly' high need for additional social renting (impossible to achieve purely by new build within the overall growth totals). By contrast, Model 2 tends to produce a more a more 'averaged' picture with less sharp variation and few 'negative net increases' indicated for social housing.

Our approach is to combine the two sets of estimates, essentially by taking the average of the two (including any negatives), but setting the resulting values to zero if they would otherwise be negative. In arriving at the 'average', we also incorporate two need-related adjustments. Firstly, for a number of authorities (46), where our baseline forecast indicates that it would be difficult to meet the needs of people experiencing core homelessness, we increase the social rent need figure somewhat. Secondly, where for a similar number of authorities (62) our baseline forecast indicates that the chances of rehousing for households in need in 2031 would be relatively high (over 12%) we reduce the need estimate proportionately. This generates our unconstrained need figure for additional social rented housing provision per year.

A further modified or 'constrained' figure is then derived. This takes account of land availability constraints on total new build activity. It also applies, in a very few cases, a constraint on total new social rent building related to the level of total new building. Logically, this cannot exceed 100%. There may be policy reasons to hold this down to a figure such as 50% or less, for example on grounds of viability and/or social mix. However, for the purposes of this study we have set it at close to the logical maximum, at 80%. It should be emphasised that this only affects a handful of local authorities. Since we are working to a total need figure already determined, of around 90,000 for England, these downward adjustments will be balanced by upward adjustments, mainly in those authorities whose total housing numbers are being increased based on evidence of high demand/ poor affordability, as described below.

Deriving the overall additional dwellings target

Our approach to setting an overall dwelling target starts from a similar-looking approach to that taken by MHCLG in setting planning targets for local authorities, but is more ambitious and takes a more explicit approach to capacity. Whereas MHCLG used the household projection as the starting point, we use the average of that and the pre-existing local plan target number. This may be characterised as a sort of 'status quo' estimate. This estimate is then adjusted according to affordability levels, being increased where affordability is low.

This level of new housing delivery is then compared with an estimate of land capacity at the local level. We also take account of indications from consideration of the Greater London Plan and the latest associated SHLAA that there is an effective realistic maximum capacity for housing delivery in London (GLA area) of around 65,000 units per year. After

comparing the SHLAA figures with our own, borough by borough, and taking the higher estimate in each case, we obtain a somewhat higher figure of c.74,000. This basically assumes strong effort continues to be given to maximising housing potential in London, consistent with planning policies.

A further stage of adjustment is carried out based on indicators of high or low demand; high demand areas have their targets increased while those exhibiting low demand indications have their numbers decreased.

At a final stage, we fine-tune the scenario in the simulation model (Model 3) by varying parameters governing the actual planning numbers at subregional level to achieve a reasonable target in terms of key outcomes, including the proportion of under-40 households able to afford home ownership and the chances of rehousing for a household in need. This involves a slight moderation in the emphasis on the South of England and some general increase in the Midlands and North. This gives an outcome where in 2031 the affordability rate to buy is almost as high in London (48%) as in the Midlands (49%) and the South (50%). For our other key indicator, the chances of a household in need being rehoused, this would be at a similar level in London (13-15%) as in the other broad English regions, a massive change from earlier years. Core homelessness as a percentage of households would still be higher in London (0.60%) but the other broad regions would be similar (around 0.23-25%).

Combining and adjusting the social renting target numbers

We take a combination of the social rented targets derived from Model 1 and Model 2, essentially an average of the two numbers but with some needs-based adjustment (upwards where core homeless pressures are expected to be high, downwards where chances of rehousing would already be high). We express the combined needs-based social renting target number as a 'quota' of total target new build. This exercise can be done at either sub-regional HMA level or LA level. We would argue that under the Duty to Co-operate, authorities should take account of needs indicators at both levels, and consider the best planning strategy to meet the needs of the HMA as a whole. It should be noted that at this final stage these averaged quotas are applied to the adjusted total new build target number, i.e. taking account of land supply constraints, high and low demand, and so forth. This has the effect of redistributing some of the social rented need to authorities which are in a better position to meet it.

Similar combining of the two models is applied to the intermediate tenures, although with less subsequent fine tuning. Under model 1, part of the backlog is assigned to Intermediate Rent, based on the relative numbers of under-40 households able to afford the two tenures.

The resulting targets from this 'bottom-up' combination of three models are aggregated by region and are shown in summary Table 3.1.

The bottom line totals here are essentially consistent with the Scenario 8 arrived at in the higher level analysis in Chapter 2. But the fact that we can build them up from a bottom-up analysis which takes account of capacity constraints, need and homelessness hotspots, low demand coldspots, and potential co-operation within wider market areas, gives some assurance that this is a realistic and achievable scenario.

Table 3.1 Adjusted housing targets by tenure and English region, based on Local Authority and Housing Market Area level analyses (number of units per year to 2031)

English Region	Total	Social rent	Shared ownership	Intermediate rent
North East	6,963	828	400	1,190
Yorkshire & Humberside	18,868	1,795	1,477	2,216
North West	22,574	4,324	3,297	3,288
East Midlands	17,248	1,867	2,202	1,929
West Midlands	21,102	3,129	3,268	2,458
South West	42,171	8,340	3,980	2,540
East of England	46,104	10,999	3,851	3,143
South East	90,179	26,250	6,466	5,319
London	74,464	32,983	2,308	10,523
Total	**339,673**	**90,515**	**27,249**	**32,605**
England headlines (rounded)	340,000	90,000	25,000	30,000

Conclusions

Chapter 4: Conclusions

This study confirms the widespread perception that housing needs have increased and current levels of housing supply are inadequate in scale and scope. There is a current backlog of households with housing need of 4.75 million households in Great Britain with 4m in England.

It is clear that we cannot meet all of these needs instantaneously. What is needed is a government-led plan for a really effective housebuilding programme over the next 25 years to address these existing needs plus expected future needs and demands.

Over that time horizon, the total level of new housebuilding required is estimated at around 340,000 *per year* for England (380,000 for GB). Of this, we estimate that the target level of new social housebuilding required is around 90,000 per year (GB 100,000), with additional provision of around 25,000 (29,000 for GB) shared ownership (or equivalent LCHO) and around 30,000 (33,000 for GB) intermediate affordable rent.

Although we have not exhaustively examined all aspects of feasibility, we have demonstrated that our suggested targets are consistent with a reasonable interpretation of evidence on available land capacity. The analysis highlights the point that not all needs can be met in the area where they arise, and local authorities need to cooperate and share in the responsibility for securing adequate housing supply. In the case of London, they cannot realistically all be met within the GLA boundaries. We also offer some preliminary estimates of the potential scope for planning obligations to meet a significant part of the subsidy cost by reducing land value.

The study considers housing requirements for the whole population, but with a particular concern for lower income groups and especially people at risk of homelessness. Drawing on other recent research it recognises and factors in the significant role of complementary measures to housing supply, particularly prevention measures, welfare changes, criminal justice and health service measures to address complex needs, in cutting the risks of core homelessness and rough sleeping.

The main focus of the analysis has been on England but it is being replicated in Wales and Scotland. The emerging findings there suggest that in Wales there is a clear case for enhanced investment in and targets for affordable housing. In Scotland, the devolved government has adopted ambitious targets for affordable and social rented supply. It is expected that

the sub-regional analysis will confirm provisional findings that the picture in Scotland is more uneven, with the need for significantly enhanced supply including social renting confined to certain geographical areas, while other areas have a more balanced position or even some over-supply; and that intermediate sector housing may merit more enhancement than social rented in some cases.

The findings of the study clearly support the notion that government should give a lead and set targets for housing supply and, within that, for affordable tenures including social renting. However, the analysis does support our initial contention that excessive reliance on household projections as a basis for housing targets is seriously flawed, and other evidence and models need to be brought to bear to arrive at a more appropriate set of targets. Furthermore this consideration should be more than tokenistic, as it is shown here that the scale of redirection of effort in terms of housing supply is really substantial, both in terms of geography and in terms of tenure.

The main role of this study has been to present evidence and analysis for the policy process to take on board, not to engage in detailed policy re-design. However, it is appropriate and of value to at least highlight areas of policy where the study findings have implications which should be given serious consideration. Acknowledgement of the scale of the challenge will be an important starting point. The study suggests levels of supply, particularly for social rented housing, that are of a different order of magnitude to anything that has been contemplated by recent governments, and perhaps closer to levels that were achieved between 1950 and 1975. This should not be a surprise, given that demographic growth in Britain in the last 20 years has far exceeded that of the previous decades. The housing supply response has, however, been sluggish, despite reports such as Barker (2004) and NHPAU (2009) urging greater action. The study provides evidence for far more ambitious targets, particularly for social rented housing.

Additional policy considerations are set out below:

- *Planning for major growth*, rather than ad hoc short term initiatives – this needs to involve gearing up of capacity and skills in national government and agencies and in local authorities, particularly those where higher levels of growth are required.
- *The role of social rented housing* emerges as a strong theme of this research, because it is very clear from the analysis of affordability based on income distributions, even taking account of access to wealth and savings, that a large number of households entering or moving through the housing system cannot afford the private market on any reasonable norms. While some can afford "intermediate rent" (which for the purposes of the study includes "affordable rent"), many households require some form of social rent based on an objective analysis of affordability.
- *Security of tenure* is a further issue for consideration. Until recently social rented housing was presumed to entail security of tenure, providing valuable reassurance to those seeking long term security and a basis for stable communities. Tenure reforms between 2010 and 2015 signalled a move away from previous assumptions, though more radical reform proposals have been withdrawn for the time being. The role of security of tenure needs to be considered alongside any strategy involving significant investment in social rented housing.
- *Rent levels*, particularly for social rented housing, have been the subject of contradictory policies since 2010. A clear, stable framework

for rent setting should be a necessary condition of any significant investment in social renting. Lower rents improve affordability for a marginal group just outside the reach of Housing Benefit/Universal Credit but shift more cost to national government in the form of grant requirements to deliver new social rented housing. Higher rents have the opposite effects but can worsen the incentives for some households to enter work or increase their working hours. There should be a more detailed analysis, beyond the scope of this study, to shape the rent setting formula, acknowledging the impact of this on the scale of the programme and any public spending settlement.

- The *financial feasibility* of a much larger social rented programme also depends significantly on the interaction between the spatial location of the new housing needed, the effective use of section 106 planning targets and obligations, as well as the availability and cost of land. Local level modelling can be used to assess the scope to defray costs to the Treasury of an enhanced social rent programme.[19] There is also scope to consider the potential impact of land compensation reform.
- The role of *intermediate rental housing*, alongside shared ownership, emerges as a significant theme from the study. We show that there is a significant contribution which can be made in most areas from such provision, alongside social renting.
- *Income distribution* particularly for younger households is a major factor underlying our findings on affordability
- On the welfare system, it is assumed that certain complementary measures are essential to secure desired reductions in core homelessness and rough sleeping – specifically lifting the LHA cap, and reversing some cuts in the generosity of Universal Credit.
- The need for a clearer *regional / urban economic development strategy* for England. Affordability problems are particularly concentrated in and around London. A change in the London-centric focus could ease the ability to meet the challenges of affordability and homelessness.
- Homeownership is an aspiration for many younger households and something that successive governments have sought to promote. However the analysis presented in this study suggests that even with large enhancements to supply and resulting improvements to affordability, while there would be an absolute growth in the numbers of homeowners, the proportion of people in homeownership would not increase greatly. There are alternative policy instruments that could be considered to address this, including tax changes or policy relating to private rented sector regulation, alongside shared ownership and similar schemes which we do take account of.

The emphasis of the study has been on housing requirements and needs, with limited consideration of resources issues and some aspects of feasibility. While land capacity has to an extent been taken into account in the estimation of regional targets, their achievability also depends on levels of subsidy available as well as policies relating to tenure mix. It is anticipated that questions relating to resource requirements, including the extent of investment required from Government, will be the subject of further analysis in 2019.

19 The recent study by Lord, A., Dunning, R., Dockerill, B., Burgess, G. and Carro, A. with Crook, T., Watkins, C. & Whitehead, C. (2018) *The Incidence, Value and Delivery of Planning Obligations and Community Infrastructure Levy in England 2016-17* shows the substantial (£4bn) value of contributions already being realised, while analysis in the Full Technical Report shows how this figure could be much higher in the context of the kind of programme recommended here.

Appendix 1 – Detailed scenarios

Scenario 1 – Large increase in general housing supply

The first alternative scenario considered is one where the *general supply of housing* is increased, without particular regard to tenure or affordable housing, essentially through raising the 'planning numbers'. The basis for doing this is to use the new target numbers issued by the MHCLG in autumn 2017, based on a simple formula which essentially increased numbers relative to household projections depending on the extent to which the house-price-to-earnings ratio exceeded the average. These target numbers are LA-specific but we have aggregated them to the level of our HMAs.

It was found on an initial test that just entering the MHCLG numbers did not have a large impact on modelled supply. This reflects a strong feature of the UK/English housing market, that the transmission mechanism between additional planning permissions and additional housing completions is somewhat weak. Our econometric modelling, based on past local data over time, shows that typically 100 extra planning permissions leads to an increase of about 40-50 completions. This general phenomenon of planning takeup has been subject to considerable national debate. To get an outcome closer to the Government's intention, we have simply doubled the MHCLG numbers. We would argue that, unless measures are taken to increase the direct and timely delivery of planning numbers and permissions into actual starts and completions, this situation will persist and it will be necessary to substantially over-allocate land in order to achieve target numbers.

As Table A.1 shows, under this scenario, completions would be 26% higher in the 5 years to 2031, which is a 44% increase in the change previously reported. (The increase would be higher in 2021 and 2041). But planning permissions would have been increased by 122% to achieve this. There would be a marked regional skew to the increase, which would be 64% in London, 24% in the South, but only 10% in the Midlands and 7.5% in the North. Whether such a large concentration of extra new supply on London is desirable or achievable is a questionable issue, as it may entail a lot of high density/high rise development and a lot of controversial estate redevelopment schemes, and there are good planning arguments for more emphasis on medium density new settlements and urban extensions in the South outside London.

In this scenario there is some consequential increase in social housing completions, but it is less in percentage terms (22%). This would arise as a natural consequence of the well-established application of planning policies and s106 agreements for affordable housing, given the greater volume of overall housebuilding planned.

Table A.1 Large increase in general housing supply

Summary Outcomes - England			Difference in change %	Change % in regional inequality
18 April 2018	2016	2031	2016-31	2031
Total New Housebuilding	4.40%	26.20%	43.70%	
New Social Housebuilding	1.80%	21.70%	32.20%	
Number of Households	0.00%	3.00%	3.30%	
Household Growth	0.20%	33.00%	29.00%	
Affordability to Buy %	0.00%	3.50%	3.10%	-103.00%
Affordability to Rent %	0.00%	0.90%	0.90%	-35.50%
Owner Occ under 40 %	0.00%	0.10%	0.10%	-0.90%
Owner Occ all %	0.00%	-0.20%	-0.10%	0.00%
Private Rent all %	0.00%	1.40%	1.60%	
Rel Poverty AHC %	19.60%	19.60%	-0.10%	-33.70%
Financial Difficulties %	0.00%	-2.20%	-2.40%	-21.30%
Concealed/sharing hhd %	0.10%	0.20%	0.10%	-30.90%
Backlog Housing Need	0.20%	-5.30%	-6.20%	-31.80%
Wider homeless	0.00%	-2.20%	-2.40%	
Core homeless	-2.40%	-19.40%	-23.50%	-32.90%
Annual net new need AH	1.00%	-18.80%	-27.20%	
Chance of Rehousing %	-0.90%	11.00%	10.70%	-19.00%

Note: Planning numbers for overall housing changed to reflect MHCLG guidance, November 2017, based on household projection enhanced by excess House Price to Earnings ratio. Total supply rises by 26-40% (England, 23-36% UK) to reach 303,000 by 2031 of which 34,000 are social rented and 19,000 LCHO.

It should be noted that this increase in housing supply would be accompanied by a substantial increase in household growth, 33% in the five years to 2031 which is actually larger than the new build boost in that particular time slice. More typically household growth responds by about 60-70% of the supply change, but with a different time profile, and a stronger response in high demand regions. This change reflects additional new household formation and also, in particular affected regions, internal migration flows. The fact that this impact is captured in our model is a major difference from conventional housing needs assessments which use household projections as a fixed base.

Our model suggests that this supply scenario would have a noticeable effect in improving affordability to buy, by around 3.5% by 2031. There would be a more dramatic reduction in the extent of regional disparity in affordability, thanks to the regionally skewed supply boost. The affordability of home ownership in London would rise by 86% (from 27% to 48% of younger households), and in the South by 17% (from 42% to 49%), even though in the North it would be virtually unchanged.

Affordability of renting does not improve much at national level, although there is a substantial reduction in the regional disparity

in this indicator as well. Despite the dramatic improvement in affordability in London, the overall share of owner occupation does not shift very much in this time period. The share of private renting actually increases slightly. There is a reduction in regional disparity in after-housing costs (AHC) poverty, and a moderate reduction in the average incidence of financial difficulties.

Generally the picture on housing needs is of modest reductions, e.g. in backlog need and wider homelessness, with a somewhat larger improvement in the chances of rehousing for those in need (11%) and a proportionately larger reduction (19%) in core homelessness as well as in net new need. There would also be a general reduction in the extent of regional disparities in needs measures, unsurprisingly given that London is usually the focus of the highest levels of housing need.

The overall conclusion of this scenario is that a large increase in general housing supply, even without a specific focus on social or affordable housing, would lead to generally beneficial outcomes across most of our target outcomes, including significant reductions in regional disparities. These findings partly reflect the concentration of this planned boost on London (and the South), although the extent of this concentration may be questioned. However, the average level of impact on affordability, particularly of market renting, is small, and the impact on the share of home ownership appears negligible (although absolute numbers of home owners would rise).

Scenario 2 – Increasing social housing

The next scenario considered is one where the *supply of social housing* is substantially increased as well, along with general new supply. The spatial distribution of general plan numbers remains as in the previous scenario, but social supply is increased partly pro rata past social completions and partly pro rata private completions - resulting in a more even regional distribution of the additional social units. New social rented completions rise by 131% in the run-up to 2031, which would be around 65,000 completions. Another feature of the model worth reporting here is that extra social completions have some positive knock-on effect on private completions, which also increase by an additional 6% points. Again, there is a further positive effect on household growth from this scenario, which would be particularly strong in the years up to 2031.

Table A.2 Increasing social housing

Summary Outcomes - England			Difference in change %	Change % in regional inequality
28 March 2018	2016	2031	2016-31	2031
Total New Housebuilding	16.70%	44.40%	49.70%	
New Social Housebuilding	65.60%	131.00%	65.20%	
Number of Households	0.40%	4.70%	4.90%	
Household Growth	7.70%	49.70%	34.60%	
Affordability to Buy %	-0.80%	5.60%	5.70%	-129.30%
Affordability to Rent %	-0.20%	1.00%	1.20%	-41.90%
Owner Occ under 40 %	1.30%	1.00%	-0.30%	3.20%
Owner Occ all %	0.30%	-0.40%	-0.60%	0.60%
Private Rent all %	-0.40%	0.30%	0.80%	
Rel Poverty AHC %	19.10%	17.50%	-1.40%	-36.10%
Financial Difficulties %	-0.30%	-3.70%	-3.70%	-24.80%
Concealed/sharing hhd %	1.70%	-0.80%	-2.70%	-35.80%
Backlog Housing Need	-0.30%	-10.20%	-11.20%	-40.50%
Wider homeless	-0.50%	-4.10%	-4.00%	
Core homeless	-2.80%	-24.30%	-29.90%	-39.50%
Annual net new need AH	-5.10%	-53.00%	-70.20%	
Chance of Rehousing %	12.70%	60.30%	37.60%	-38.80%

Note: Overall planning numbers and distribution as for Table A.1 scenario, with enhanced social housing pro rata past levels and private completions, achieving 347,000 total completions by 2031 of which 65,000 are social rented and 19,500 LCHO.

Most of the outcome variables of interest would show a somewhat greater improvement than under the previous strategy. That would include a greater average improvement and a greater reduction in regional disparities for the affordability indicators and pretty well all of the need indicators. Of greater note would be the 10% reduction in backlog need, with 41% reduction in regional disparities; the 24% reduction in core homelessness, with 40% reduction in regional disparities; the 53% reduction in the annual net new need for affordable housing; and the dramatic 60% improvement in 'chances of rehousing' for households in need, with a 39% reduction in regional disparities. These indicators benefit from both the direct effect of new social supply on lettings but also the progressive later effect of increased relets supply.

Again, this scenario has only the most marginal impacts on home ownership rates, although absolute number of owners would rise.

Scenario 3 – South East focus

This illustrates a variant on this enhanced supply scenario where we reflect some 'good planning' arguments to shift the emphasis in enhanced growth somewhat from London to the rest of the South of England, with a particular emphasis on a set of 'growth areas' situated in the South East and East regions (Milton Keynes-Luton-Watford; Greater

Reading; Bedford; North Herts-Stevenage-Welwyn Hatfield; Greater Oxford; West Northants; Greater Cambridge).[20] The overall social and private housing numbers are similar to the previous scenario.

The broad picture is that on most outcome indicators the result is a further improvement in average score, although the impact on regional disparity is in some instances rather less. This is clearly the case for the affordability to buy and to rent indicators, financial difficulties, wider homelessness, annual net new need and chance of rehousing. For backlog need and core homelessness the average reduction is marginally less.

Table A.3 Scenario 4 - Targeting homelessness

Summary Outcomes - England			Difference in change %	Change % in regional inequality
Baseline 28 March 2018	2016	2031	2016-31	2031
Total New Housebuilding	17.80%	42.90%	44.60%	
New Social Housebuilding	66.50%	131.00%	64.00%	
Number of Households	0.40%	4.90%	5.10%	
Household Growth	7.60%	52.60%	37.10%	
Affordability to Buy %	-0.80%	7.80%	7.70%	-73.40%
Affordability to Rent %	-0.20%	1.20%	1.30%	-20.10%
Owner Occ under 40 %	1.30%	1.10%	-0.20%	3.10%
Owner Occ all %	0.20%	-0.80%	-1.00%	0.50%
Private Rent all %	-0.40%	1.40%	2.20%	
Rel Poverty AHC %	19.10%	-0.50%	-17.30%	-23.00%
Financial Difficulties %	-0.30%	-12.40%	-13.00%	-25.00%
Concealed/sharing hhd %	1.80%	-0.90%	-2.80%	-50.00%
Backlog Housing Need	-0.30%	-14.50%	-16.10%	-30.60%
Wider homeless	-0.50%	-7.30%	-7.40%	
Core homeless	-2.90%	-57.00%	-75.40%	-40.50%
Annual net new need AH	-4.80%	-63.50%	-85.80%	
Chance of Rehousing %	12.00%	84.30%	57.60%	-33.70%

Note: Overall planning numbers as in Table A.2, including additional allocations to growth areas in Reading-Oxford-Milton Keynes-Cambridge and rest of South East, but less to London; with enhanced social housing pro rata past levels and private completions, achieving 344,000 total completions by 2031 of which 65,000 are social rented and 19,500 LCHO. Additional measures to reduce homelessness including cessation of welfare cuts/reforms post 2015 and ending LHA freeze, maximal LA prevention activity, phased reduction in hostels replaced by Housing First.

20 This group of HMAs is not identical to the arc of growth linking Ox ford and Cambridge which the Government is now promoting, but it overlaps heavily and reflects the same general motivation.

Table A.4 Rehousing probabilities and waiting times, comparing actual and notional cases

Cases	Prob'y Rehouse	Prob'y Exit	Waiting Time	Prob'y excl exits
Baseline	0.05	0.37	2.4	8%
Worst (GLA)	0.04	0.29	3.1	5%
Best (North)	0.08	0.41	2.1	14%
Double baseline	0.1	0.37	2.2	15%
Treble baseline	0.15	0.37	2	23%
Quadruple baseline	0.19	0.37	1.8	31%
5x baseline	0.24	0.37	1.6	38%
6x baseline	0.29	0.37	1.5	46%

Note: based on analysis of need and rehousing data across waves 6-7 of UKHLS

Scenario 4 – Targeting homelessness

Housing supply is not the only way of addressing problems of housing need. At this point we illustrate this by drawing in a package of measures identified in research for Crisis on homelessness projections (Bramley 2018 forthcoming). The measures added to the mix at this point include the following

- Ending of welfare cuts, including the LHA freeze;
- Maximal application of prevention measures by all local authorities;
- Continued diversification of housing models to address homelessness.

These measures, combined with the preceding supply scenario, are reflected in the outcomes see in Table A.3.

As one might expect, the main effects are found in the core homelessness numbers; the change in these at 2031 jumps from -24% to -57%, which is in effect a real reduction in core homelessness to substantially below the level of 2011 (77,500 compared with 180,100 in the baseline and 142,300 after the supply boost). There is also a substantial reduction in the regional disparities in core homelessness. The reduction in the wider homelessness group is much more modest, at 2.4% points.

However, the additional benefits of this strategy do extend to some of the other outcome indicators, particularly financial difficulties (an improvement of 7% points on Scenario 3), backlog need (improving by 5% points), annual net new need (a 5% point improvement) and the chances of rehousing (up by 13% points).

Scenario 5 – Targeted social housing

One further scenario is reported in this sequence, building on those just described. The key difference in this case, reported in Table A.5, is that the additional new social rented housing is *targeted* to particular localities/ HMAs on *the basis of needs*. The need indicator developed for this purpose may be described as a 'classic affordability-based needs model', similar to those used by the author in studies in the early 2000s, and reflected in the 2000 edition of the DETR Guidance to local authorities on Local Housing Needs Assessment.

Under this approach, the net need for additional affordable housing is as described as 'Model 1' in Chapter 3, which looks at new and mover households who can't afford to enter the market and compares their numbers with the supply of relets of social rented housing.

This number is expressed as a percentage of households. If it is less than zero, it is set to zero (this applies to 65 out of 102 HMAs in England, based on data for the period 2011-15). The mean value is 0.25%, and the maximum 1.14%. In this scenario, this factor is used to allocate the part of new social housing previously allocated pro rata past delivery; the other part, pro rata new private housing output, remains. That means that this is not the most extreme form of needs-based allocation that could be considered.

The differences between this and the previous scenario are relatively modest. Some of these might reflect the fact that in practice the average level of social housebuilding is slightly higher in this scenario. The general pattern seems to be that the impact on the average level of outcomes is small but generally there is a marked further reduction in the regional disparities. This applies for example to the affordability to buy and rent indicators, and the relative poverty and financial difficulties indicators, and core homelessness. There is a definite reduction in average levels of concealed/sharing households and backlog needs accompanied by a greater reduction in regional disparities. There is a slight reduction in annual net new need and in the chance of rehousing performance, although again in the latter case the reduction in regional disparities is marked.

Overall, and perhaps unsurprisingly, better spatial targeting of social housing supply leads to a further reduction in regional inequalities in housing need outcomes, while making a modest contribution to reducing the average level of some of these.

Table A.5 Summary of Scenarios

Characterisation of Scenario	Annual Numbers for England (thousands per year)					Homelessness Outcome (% change from baseline at 2031)	
(Table reference no.)	Total	Private	SR	SO/LCHO	IR	Wider	Core
2.3. Static Projection	338	186	97	22	32	NA	NA
aa Dynamic Baseline Scenario	240	180	28	16	16	0.0% (8.5% above 2016)	0.0% (31% above 2016)
A.1 Large increase in general housing supply	303	231	34	19	19	-2.2%	-19.4%
A.2 Increasing social housing	347	242	65	20	20	-4.1%	-24.3%
A.3 South East focus	344	239	65	20	20	-4.7%	-21.2%
A.4 Targeting homelessness	344	239	65	20	20	-7.3%	-57.0%
A.5 Targeted social housing	354	241	71	21	21	-7.9%	-57.0%
A.6 High social, wider regional spread	375	214	101	30	30	-7.8%	-55.0%
A.7 South East focus, targeted social	361	224	85	26	26	-8.6%	-55.2%
A.8 Less strong regional, high social	343	198	91	27	27	-8.3%	-55.5%

The Upper Limits on Supply

Chapter 2 presents a 'static' projection which suggests that there is a case for building 350,000 dwellings per year in England including 97,000 social rented dwellings and about 54,000 in intermediate tenures. However, once a forecasting approach which takes account of dynamic interactions in the market is adopted, then it may not be necessary to build that much housing, overall or in the social tenures, because of certain 'virtuous circle' type effects associated with improved overall affordability. In a sense scenario 5, where social housing output is at about 70,000 (but total new build around 350,000), is implicitly assuming some such effects.

We can and should, however, use the model to illustrate what would be expected to happen if we did push the level of social housing output up towards or even beyond 100,000. Part of the way of doing that is to increase it across the board rather than in a targeted way. This scenario can also be used to illustrate another relevant output from the model, namely indicators of emerging problems of 'low demand' in some local housing markets. These may provide another line of argument about upper limits, apart from the obvious ones about 'viability' and financial feasibility.

Using an outcome-oriented approach, we need to consider which outcomes are paramount and whether there are any particular levels for those outcomes which can be argued to be the 'right' level. Such a question involves a mixture of logic, evidence and value judgement. It can be argued that a good key indicator to target in this context is the one shown at the bottom of Tables A.1-A.4, which measures the change in the chance of a household in need (and unable to afford market housing) being able to access social rented housing over the space of a year. We can see from Table 2.5 that baseline levels of this indicator are very low, particularly in London and the South. But how much higher is the ideal or right level?

We have examined data from the longitudinal survey UKHLS, where we observe households' need status in successive years and whether they then moved into social housing. These findings are summarised in Table A.4. On average, in 2014-15, the probability of a household in need being rehoused in social housing was only about 5% (column 1). However, it turns out that there is a very high level of churn in the housing need population. 37% of those in need in the previous year were not in need in 2015, excluding those actually rehoused. People in housing need are often in circumstances of change and instability, but very often find solutions to their problem, at least for a period, without moving into social housing. Once you allow for that, the probability of rehousing for those who were in need *and remain in need* rises to 8%. You can also calculate from this information, allowing for further exits from the need cohort each year, that the average waiting time to rehousing would actually be 2.4 years.

Table A.6 High social housing, wider regional spread

Summary Outcomes			Difference in Change %	Change % in regional inequality
England				
Optimised September 2018	2016	2031	2016-31	2031
Total New Housebuilding	15.30%	41.90%	48.00%	
New Social Housebuilding	73.60%	216.30%	136.20%	
Number of Households	0.40%	3.30%	3.30%	
Household Growth	8.10%	35.40%	21.80%	
Affordability to Buy %	-0.80%	3.90%	4.20%	-93.50%
Affordability to Rent %	-0.20%	-0.10%	0.10%	-29.60%
Owner Occ under 40 %	0.70%	0.50%	-0.30%	-1.60%
Owner Occ all %	0.20%	-0.90%	-1.00%	-0.40%
Private Rent all %	-0.40%	-1.00%	-0.70%	
Rel Poverty AHC %	-0.50%	-17.60%	-18.20%	-1.20%
Financial Difficulties %	-0.30%	-9.80%	-10.40%	-11.30%
Concealed/sharing hhd %	1.60%	-7.90%	-10.20%	-46.30%
Backlog Housing Need	-0.60%	-18.50%	-20.40%	-42.60%
Wider homeless	-0.50%	-7.60%	-7.70%	
Core homeless	-0.40%	-52.60%	-65.30%	-35.90%
Annual net new need AH	-5.40%	-47.10%	-66.30%	
Chance of Rehousing %	14.60%	102.30%	63.10%	-59.60%
Low Demand Indicators	2016.00%	2031.00%	Change %	
HMAs Excess Vacancies (>6%)	0.00%	72.70%	2400.00%	
HMAs High Relets (>6%)	16.70%	300.00%	40.50%	
HMAs Price< Cost	2.20%	#DIV/0!	4.30%	

Note: the outturn forecast housing output is c.340,000, with social housing output at around 90,000; these are consistent with initial and adjusted targets at national level.

Table A.4 shows the worst (GLA) and best (North) regions in Britain in terms of rehousing prospects, ranging from 5% (3.1 year wait) in London to 14% (2.1 years) in the North. The following rows show the effects on these indicators of doubling, trebling, quadrupling etc. the probability of rehousing from the baseline average level. This is essentially what our high supply scenarios would do, firstly by increasing supply directly as new build first lets, secondly by increasing the stock of social housing and the base for relets, thirdly by easing affordability which will increase relet rates as more tenants move out into the private sector, and fourthly by reducing the backlog need which is the denominator for the 'chances of rehousing'. Trebling the baseline is slightly better than the position in the currently most favoured region (the North), and roughly the scale of improvement offered by the scenarios just discussed across the country as

a whole, on average. However, for the South the level of improvement is more like quadrupling, as it is almost five times as high by 2041. This means that these scenarios would offer effective chances of rehousing in the 20-30% range with an average time to rehousing rather below two years.

This kind of approach does not readily lead to a conclusion that a particular level of social housing supply is optimal. Nevertheless, this indicator is valuable for targeting greater interregional equality.

Another common sense indicator is the 'net new affordable need' number, which subtracts net relets from gross new household formation (and an allowance for migrant households) below the threshold for market affordability. If this is much larger than the new build programme, it tends to imply that backlog needs will rise, whereas if it is smaller then it is more likely that backlog will fall (although of course the backlog is also affected by other variables and is characterised by the high level of churn). If it is negative, it suggests there is less need for additional new provision and that the backlog is more likely to fall anyway. It is worth noting that this indicator was substantially negative in Scotland in 2016 and forecast to be a growing negative in future years, one reason for caution about the need estimates for Scotland. Wales had a small negative in 2021, but otherwise for forward years all broad regions had positive figures in the baseline. The England total in the baseline is 63,000 in 2021 rising to 107,000 in 2031, orders of magnitude which are not inconsistent with the scenarios being explored (allowing for the fact that intermediate rent would be part of affordable supply). However, the figure quickly falls as supply is ramped up – all scenarios including social housing new supply exceeding 65,000 also show this indicator as at 2031 being significantly less than the new supply number, implying that the backlog should be being reduced.

Basically our approach is to refer to a range of indicators, of which two have been discussed in more detail here. Other important ones include after housing costs poverty, backlog housing needs, and of course core homelessness. An adequate supply of social housing should see significant falls in the former and very large reductions in the latter.

The low demand indicators – excess vacancies, high relet turnover rates, and low house prices relative to rebuilding costs, are also valuable warning signs of emerging oversupply. Table 2.8 in the main text, which summarises the outcomes of the preferred strategy from the high level analysis, or Table A.4 in this appendix, show rather large rises in the number of local authorities with excess vacancies or relets by 2031, again indicating that these scenarios are probably around the realistic limit for total and social supply.

Scenario 6 – High social, wider regional spread

This is the first of several scenarios designed to achieve up to 100,000 new social housing units in England as part of a programme of up to 375,000 in total. In this scenario, for comparability, we keep in place the specific non-supply measures geared to reducing core homelessness, as described above, but the increased supply is essentially a proportional expansion on past levels and plans, rather than the targeted strategy. This strategy shows somewhat lower household growth, implying when supply is targeted on areas of greatest need/shortage, it releases more pent-up demand for household formation than when it is spread around including areas where there is less such pent-up demand.

On the key affordability impacts, this strategy has a somewhat bigger positive impact on average affordability to buy, but does much less to reduce regional inequality. However, the

impact on rental affordability is slightly weaker and does rather less for regional inequality. For younger homeownership rates, the average impact is the same (small) but the inequality gets worse. For overall homeownership, and also for private renting, the outcome is slightly better (more social renting substituted for private renting).

For the first three housing poverty/need indicators, the average outcome is slightly better but the regional inequality is worse. For the general backlog need and the homelessness indicators, the average outcome is a little bit less good and the regional inequality is worse. Annual net new need for affordable housing 'improves' but in fact tends to overshoot (i.e. the change is more than 100%). The chance of a household in need being rehoused increases substantially more on average, but there is less reduction in regional inequality. So overall it is a mixed picture on needs, predominantly showing some gains on average but less reduction in regional inequality. On some indicators the level of improvement appears to be approaching a satiation level.This is confirmed by the low demand indicators, e.g. doubling in number of authorities with excess vacancies or relets.

Scenario 7 – South East focus, targeted social

This scenario involves social housing output at 85,000 (three times the baseline scenario), with total new build at 360,000 (50% higher); overall planning numbers are boosted particularly in the South of England and social housing is targeted according to the needs formula, and the other homelessness reduction measures are included.

This shows modest or significant improvements in most of the poverty and housing needs measures, apart from annual net new need, considering both average levels and regional inequality. The average level of affordability is slightly less good while the attempt at regional equity is over-shot in this case. This suggests that there is a good case for pushing social housing output up to this level (85k), which may be close to the optimum, but that possibly slightly less geographical targeting would be appropriate.

Comparing with Scenario 6, there is a slightly less strong average performance on affordability and poverty, but generally the equality performance is markedly better. On housing needs, both average performance and equality are better in this case.

Scenario 8 – Less strong regional, high social

This is a variant of the previous scenario, which goes for a slightly higher number with somewhat less geographical targeting. The high level outcomes were shown in Table 2.8 in the main report.

Compared to Scenario 7, this scenario produces somewhat lower affordability gains, but more generally achieves similar or better average achievements, but with some reduction in the extent to which regional inequality is narrowed. Compared with Scenario 6, most of the indicators are better or similar. This generally reinforces the view that the optimal level of social housing supply for England lies in the range 85-90,000.

To sum up, we have found that, alongside a generous overall housing supply (c. 340k), increasing social housing supply, with a degree of targeting towards areas of greatest need, generally leads to better outcomes as this level rises to around 85-90k for England.

Increasing beyond this level produces some evidence of overshooting, some less favourable outcomes and in particular, a rapid escalation and spread of low demand problems.

Table A.7 Key Outcomes of Core High Supply Scenario by Region
(a) percentage levels

English Region	Backlog Needs	Chance Rehouse	Core Hless % hhd	Core Hless flow as % rehousing	Able to Buy % < 40s	Afford Mkt Rent % < 40s	Share Private Rent %
	2031	2031	2031	2031	2031	2031	2031
North East	11.40%	10.20%	0.30%	60.60%	34.20%	52.40%	21.1
Yorkshire & Humberside	10.40%	15.40%	0.30%	42.90%	41.80%	65.70%	22.1
North West	9.30%	20.60%	0.30%	45.80%	45.60%	62.60%	18.9
East Midlands	9.70%	13.40%	0.20%	29.10%	50.00%	74.10%	19
West Midlands	8.50%	14.30%	0.30%	37.60%	51.30%	67.40%	18.3
South West	7.50%	20.10%	0.20%	24.70%	52.50%	62.20%	20.5
East of England	9.50%	18.70%	0.30%	27.40%	53.20%	71.60%	19.8
South East	8.70%	19.10%	0.20%	21.90%	58.40%	72.00%	20.6
London	13.80%	11.70%	0.70%	52.90%	42.90%	43.70%	32.7
England	9.40%	16.50%	0.30%	36.30%	48.40%	66.00%	20.1

(b) percentage point differences from baseline

English Region	Backlog Needs	Chance Rehouse	Core Hless % hhd	Core Hless flow as % rehousing	Able to Buy % < 40s	Afford Mkt Rent % < 40s	Share Private Rent %
	2031	2031	2031	2031	2031	2031	2031
North East	-0.60%	1.70%	-0.20%	-70.40%	0.80%	-0.20%	-0.2
Yorkshire & Humberside	-1.20%	7.70%	-0.20%	-70.20%	3.10%	0.70%	-0.1
North West	-1.80%	13.30%	-0.20%	-62.30%	6.40%	2.50%	-0.1
East Midlands	-1.10%	4.90%	-0.20%	-46.00%	3.80%	0.70%	-0.2
West Midlands	-1.20%	4.90%	-0.20%	-55.20%	6.40%	2.30%	-0.1
South West	-1.90%	8.40%	-0.20%	-46.80%	8.00%	2.90%	-0.2
East of England	-1.80%	7.70%	-0.20%	-41.80%	8.40%	2.90%	-0.2
South East	-2.70%	10.40%	-0.20%	-61.40%	17.00%	6.00%	-0.1
London	-6.60%	7.70%	-1.50%	-275.50%	18.00%	7.20%	-0.5
England	-1.50%	7.40%	-0.20%	-56.80%	6.70%	2.20%	-0.1

Regional Impacts

It is appropriate here to look at the patterns across the standard regional breakdown for England. Table A.7 presents the key outcomes, firstly as levels in 2031 and secondly as changes (in percentage points). It follows from one of our key assumptions that a desirable end position for this plan period is that the need/outcome indicators should show relatively similar levels across regions, as a result of reducing regional disparities. As a broad generalisation, Table A.7 (a) suggests that the overall picture shows more similarity than difference across the regions, although there are still some remaining differences. Backlog need remains higher in London and to some extent in the North East and Yorkshire-Humber, compared with the southern regions. The chances of rehousing for households in need are similar between London and North East, but higher in the North West and South West. Core homelessness remains higher in London but otherwise fairly uniform. Core homelessness takes more of the rehousing flow in the North East and London compared with southern and East Midlands regions. Ability to buy is better in south and midlands, poorer in London and worst in NE, but affordability to rent in market remains clearly lower in London than all other regions, at the same time that the share of private renting of all households is much higher in London. These findings underline that some of London's pressures are hard to fully relieve, but also that the problems of the North East may be in danger of some neglect.

Table A.7 (b) shows the extent of the changes (generally improvements) in outcomes across the regions resulting from the higher supply strategy. The general pattern is of bigger impacts in London and the South, especially the South East, with lesser impacts in the northern regions, although for some indicators the improvements in the north are sizeable. This pattern of results is expected and broadly as intended, based on a strategy of targeting areas of higher need, albeit subject to some constraints. The homelessness-related indicators show more of a significant improvement across all regions, because the core strategy modelled also involves measures other than supply, particularly in the fields of welfare and prevention, which would apply across the country.

Additional Scenarios

The full modelled system has also been subject to further scenario tests, in particular relating to the overall level of demographic and economic growth.

The lower growth scenario captures both possible demographic developments, namely a continued moderation in trend to lower death rates/longer life expectancy along with lower international migration, alongside a lower rate of economic growth (GDP growth down by 0.3% points), which might reflect Brexit risks but also recent evidence on low productivity performance.

Low growth on its own, with baseline supply, tends to improve a number of outcomes including affordability, backlog need and core homelessness, by a moderate amount, essentially because it eases pressure on the housing market. However, if combined with the recommended high supply scenario, then the outcomes would be much more favourable, and somewhat more favourable than those described above, apart from somewhat greater risks of low demand emerging in more areas.

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ISBN 978-1-78519-058-2
Crisis UK (trading as Crisis).
Registered Charity Numbers: E&W1082947, SC040094. Company Number: 4024938

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