



NLP Technical Paper 1

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Subject Knowsley Local Plan Core Strategy EiP – Housing Need

1.0 Introduction

1.1 Nathaniel Lichfield & Partners [NLP] was instructed by Taylor Wimpey UK Limited [Taylor Wimpey] and Redrow Homes Limited [Redrow] to make representations on the Publication Knowsley Local Plan Core Strategy [PKLPCS] in 2012.

1.2 This Technical Paper accompanies the further submissions of Taylor Wimpey and Redrow in relation to the forthcoming Examination in Public [EiP] hearing session concerning Matter 3 (Housing Provision). Separate submissions have been lodged on behalf of Taylor Wimpey and Redrow Homes to address Matters 2 (Spatial Development Strategy and Principles) and 5 (Green Belt).

1.3 This Technical Paper examines the housing requirement evidence undertaken by Knowsley Borough Council [KBC] and presents the findings of a new, independently-modelled set of demographic and employment-led projections in the light of the Inspector's questions. This Paper should be read in conjunction with the Matter 3 (Housing Provision) submission.

2.0 Overview of KBC Technical Report 'Planning for Housing Growth in Knowsley', July 2013

2.1 The National Planning Policy Framework [The Framework] requires Local Planning Authorities [LPAs] to '*use their evidence base to ensure that their Local Plan meets the full, objectively assessed needs for market and affordable housing in the housing market area*' [para 47]. In this regard, KBC has produced a document entitled '*Planning for Housing Growth – Technical Report [PHGTR]*' (July 2013) to support the PKLPCS and the planning policies therein.

2.2 The PHGTR assessed the drivers behind the need and demand for new housing; risks to delivery (including the availability of land); modelled a range of scenarios of housing growth; and outlined the implications of different levels of housing growth on land availability in Knowsley.

2.3 In total, sixteen housing 'targets' were modelled by KBC to inform the definition of the Objectively Assessed Need [OAN] for housing in the Borough over the 18-year Plan period 2010 to 2028. These are set out in Table 1.

Table 1 Summary of KMB Housing Scenarios

Scenario	KBC Explanation	Annual dpa	2010-2028
A. Regional Spatial Strategy	RS Target	450	8,100
B. Regional Spatial Strategy	RS target, accounting for backlog from 2003/04 to 2009/10	554	9,972
C. Projected Household Growth	Baseline annual household growth from CLG household projections	241	4,338
D. Using Maximum Land Capacity	Using all sources of available housing land in the urban area	349	6,288
E Historic Build Rates	Historic build rates over a longer term 16 year period (1997/8-2011/12)	266	4,788
F Historic Build Rates	Historic build rates over a short term 5 year period (2008/09-2011/12)	194	3,492
G Historic Build Rates	Historic build rates achieved during the peak 5-year period of delivery in the past 15 years (1995/96 to 1999/00))	529	9,522
H. Housing Need and Demand	SHMA Housing Requirements for affordable and market housing (affordable housing need to be met within 10 years).	1,048	18,864
I. A: RSS	H1: distribution based on current RS distribution	450	8,100
J. B: REFP Forecasts	H1: distribution based on REFP population (workplace based)	424	7,632
K. B: REFP Forecasts	H2: distribution based on calculated residence based employment in 2030	466	8,388
L. C: ONS Forecasts	H1: distribution based on demographic trends	413	7,434
M. D: NHPAU Lower Range	H1: distribution based on current RS.	514	9,252
N. D: NHPAU Lower Range	H2: distribution based on calculated residence based employment in 2030	507	9,126
O. D: NHPAU Upper Range	H1: distribution based on current RS	582	10,476
P. D: NHPAU Upper Range	H2: distribution based on calculated residence-based employment in 2030.	575	10,350

Source: Table 7.3 Model Runs, KBC Planning for Housing Growth – Technical Report (July 2013)

2.4 The report noted that *‘an appropriate annual target for housing growth in Knowsley will fall within the range of 194dpa to 1,000dpa, and is likely to appropriately centre within a range of the mid-point of these extreme scenarios [para 9.5.2].*

2.5 Taking into account the information collated in the PHGTP, KBC concluded that an annual average of 450 dwellings per annum [dpa] would be appropriate from April 2010 to March 2028, or 8,100 dwellings in total.

2.6

KBC justifies this level of provision on the following grounds (inter alia):

- 1 It will be appropriate to meet an estimate of the Council's assessed housing needs and demands in Knowsley having regard to the majority of the various model runs;
- 2 It provides a level of housing which significantly exceeds the baseline requirements identified through consideration of the latest (Interim 2011-based) CLG household projections, ensuring that the predicted levels of household growth in Knowsley can be catered for, whilst also providing housing to meet outstanding needs and demands which have not been met over previous years;
- 3 It acknowledges that Knowsley is seeking to meet its own housing requirements within its Borough area;
- 4 It will help to support the Council's objectives to stabilise population levels within the Borough and provide a stable supply of affordable housing;
- 5 It will exceed recent historic build rates (which the Council acknowledges have been low and they have not met housing needs), allowing for growth on these levels but recognising that historic peak build rates are unlikely to be achieved in the short term;
- 6 It is flexible to allow for varied delivery over the plan period, recognising that macro and local economic circumstances are likely to result in uneven delivery rates;
- 7 Its implementation in terms of identifying available land required to meet the target will result in the availability of a range of housing sites in Knowsley, providing choice and flexibility for developers and RPs;
- 8 The target will be of a scale which would continue to recognise the role of Knowsley's settlements (established within the RS) of being larger suburban towns within the Liverpool City Region with a scale and function which complements that of the larger settlements in the surrounding area; and,
- 9 It is realistic and deliverable, and the best option for Knowsley when compared with the reasonable alternatives [para 9.9.1].

2.7

Taylor Wimpey and Redrow welcome the aspiration expressed by KBC to exceed the basic demographic projections, in part to meet past housing under-provision (backlog). The Council's intention to meet all of its own housing needs within its boundaries and their willingness to explore options requiring Green Belt release to enable it to do so, accords with the general ethos of The Framework. Providing a level of housing above the level suggested by the (interim) 2011-based CLG household projections also addresses The Framework's requirement that it is incumbent upon LPAs 'to boost significantly the supply of housing' [para

47]. In this regard the 2011-based (interim) household projections produced by CLG represent the most up-to-date indication of household change currently available at a national, regional and local level. The projections incorporate the most up to date information from the 2011 Census, and supersede the 2008-based household projections.

- 2.8 However, it is important to note that there are a variety of limitations with the projections, not least the fact that these are demographic and trend-based only and do not take into account any policy changes that may affect actual household formation in future.
- 2.9 The most obvious statistical shortcoming is that the projections only span a 10-year period, which presents difficulties for LPAs such as KBC looking to plan for a minimum of 15 years into the future. Furthermore, although Census 2011 data was used where possible, where data was not available (for example, household representative rates by age and marital status) information was used from the Labour Force Survey data or from previous projections instead. In this regard:
- 2.10 *'The household projections are derived from the SNPP, so any limitations with the interim population projections would also need to be taken into account when interpreting household projections. For example, population projections generally update underlying demographic assumptions on fertility and migration in line with new available data, but for the 2011-based SNPP trends from the 2010-based projections were used. (CLG (2013): 2011-based Interim Household Projections - Quality Report)'*
- 2.11 It is important to note that there is a marked difference between the household formation rates underpinning the 2008-based and (interim) 2011-based household projections. At the national level, the latest 2011-based projections strongly reflect recently observed trends in suppressed household formation which are associated, at least in part, with the impacts of the recession and past housing under-supply. CLG cautions against simply rolling forward household formation rates beyond 2021:
- 2.12 *"There are also particular limitations in the use of the 2011-based interim household projections. The projections only span for a 10-year period so users that require a longer time span would need to judge whether recent household formation trends are likely to continue. (CLG (2013): 2011-based Interim Household Projections - Quality Report)".*
- 2.13 NLP considers that as the market recovers the suppressed demand resulting from the recessionary constraints on household formation will simply be unlocked. In particular, this will include people in the 25-44 age brackets (and in many cases seeking to start families) being able to get on the housing ladder and form new households.

- 2.14 Therefore, beyond 2021 NLP recommends applying the rate of annual change in household formation from the 2008-based household projections to reflect such long term trends (and in the absence of other long-term projections of household formation). This is the approach taken in the PopGroup modelling outlined in 3.0.
- 2.15 However, we have some concerns regarding the robustness of the modelled scenarios and the justification behind the 450 dpa figure. In particular, it would appear that KBC has not undertaken detailed demographic modelling to support its conclusions, and has relied to an extent on outdated model runs. For example:
- 1 Scenario C comprises the baseline annual household growth from the 2011-based interim household projections. The figure of 241 dwellings quoted in the PGHTP is incorrect, as this should refer to households, not dwellings – an allowance has to be made for vacancy rates/second homes. Furthermore, as KBC recognises, the figure quoted is not robust post 2021 and no attempt has been made to model the implications of changing headship rates from 2021 to 2028;
 - 2 Scenario D is a supply-based figure that should not be used to inform the OAN (as recognised in the Government’s draft Beta Planning Practice Guidance);
 - 3 Scenarios E-F refer to Historic Build Rates, which are not in themselves assessments of need; rather they provide an indication of the level that has been delivered in the past (often during times of housing supply constraint due to planning policy choices/the economic downturn); and,
 - 4 Scenarios I-P all refer to scenarios that were undertaken by 4NW to establish targets that were originally planned to be incorporated in RS2010. These are now outdated and do not incorporate the latest sub-national population projections [SNPP] (interim or otherwise); household projections or 2011 Census data.
- 2.16 In particular, KBC has not modelled any scenario that explicitly seeks to provide a level of housing growth that would enable the Council’s economic aspirations to be sustainably realised. As noted in the Government’s draft Beta guidance, *‘Plan makers should make an assessment of the likely growth in job numbers based on past trends and/or economic forecasts as appropriate and also having regard to the growth of the working age population in the housing market area.’*
- 2.17 Furthermore, the PHGTP notes that *‘the Council has failed to deliver sufficient housing in the recent past to meet needs...the Council recognises that performance against a previously adopted housing target (i.e. RS) can represent a useful examination of the additional houses which should have been provided in the past. The Council considers that the most appropriate approach is to recommend uplift on the level of baseline household projections to account for*

this backlog' [para 9.2.5]. However, this approach has not been consistently applied to the Scenarios outlined in Table 1.

2.18 For these reasons, Taylor Wimpey and Redrow object to the 450 dpa target as this does not represent the most appropriate strategy when considered against reasonable alternatives. KBC has failed to use the most up-to-date statistical evidence to inform its housing strategy for the Borough as required by The Framework [§ 158].

3.0 **NLP Demographic and Employment-led Modelling**

3.1 It is considered that the KLPCS would benefit from a more robust, evidence-based, approach to assessing the need for housing in Knowsley over the period 2010-2028.

3.2 To facilitate this NLP has undertaken a demographic modelling exercise, based upon a range of housing, economic and demographic factors, trends and forecasts. The model involved the use of a variety of forecasting techniques and analysis to avoid any over-reliance on 'predict and provide'. Specifically, this incorporated the '**PopGroup**' demographic forecasting tool, which is widely used by over 90 LA and private sector bodies.

3.3 NLP modelled a range of housing scenarios, incorporating recent demographic trends, the 2011-based (interim) SNPP and equivalent CLG household projections and various economic growth targets as set out in other elements of KBC's Local Plan evidence base (specifically the 2013 'Planning for Employment Growth – Technical Report).

3.4 There are a number of assumptions which underpinned the baseline PopGroup modelled scenario including:

- a. Future change assumed in the Total Fertility Rates [TFR] and Standardised Mortality Rates [SMR] are based on the birth and death projections derived from the ONS 2011-based SNPP. This in turn is used to derive future projected TFRs and SMRs through PopGroup;
- b. Inputs on headship rates (using the CLG 2011-based household forecast headship rates up to 2021, and the 2008-based rates after this time)¹;

¹It is important to note that the interim 2011-based SNPP are an indication of the future trends in population by age and sex over the next 10 years (i.e. they only cover the period 2011-2021). To extend the time period to comply with the Local Plan period (to 2028), an assumption has been made that the annual population growth will correspond to the annual rate of growth informing the 2010-based SNPP. This is lower than projecting forward the 2011-based SNPP's growth trajectory post 2021, which adds to the robustness of this approach.

- c. In Knowsley (as in any area), it is expected that housing vacancies and second homes will result in the number of dwellings exceeding the number of households. In establishing future projections, it is likewise expected that the dwelling requirement will exceed the household forecast. Hence a rate of 3.6%² has been factored into the model, based upon the most recent vacancy data available for the Borough;
- d. To calculate the unemployment rate, NLP took Jan 2011–Dec 2011 NOMIS unemployment figures (11.8% in Knowsley) to equate to the 2011 rates, and the 2012 NOMIS equivalents (12.6%) for 2012. NLP kept these figures constant for 2013 and 2014 to reflect initial stabilisation at the current high rate, and then gradually reduced the rate on a linear basis to the long term average of 10.01% to 2019. This figure was then held constant to the end of the forecasting period on the grounds that as the economy grows out of recession unemployment is likely to fall back to a similar rate as seen pre-recession; and,
- e. It was then assumed that the commuting rate of 1.11 remains static with no inferred increase or decrease in commuting levels for the majority of the scenarios³.

- 3.5 There is also an additional driver underpinning growth in household formation, due to the strong trend towards smaller average household sizes in the Borough.
- 3.6 A detailed tabulated methodology for each of the modelled scenarios is provided in Appendix 1. The results are summarised in Table 2 and Appendix 2. They are also illustrated in Figure 1.

² Council Tax Base for Formula Grant Purposes CTB (October 2012)

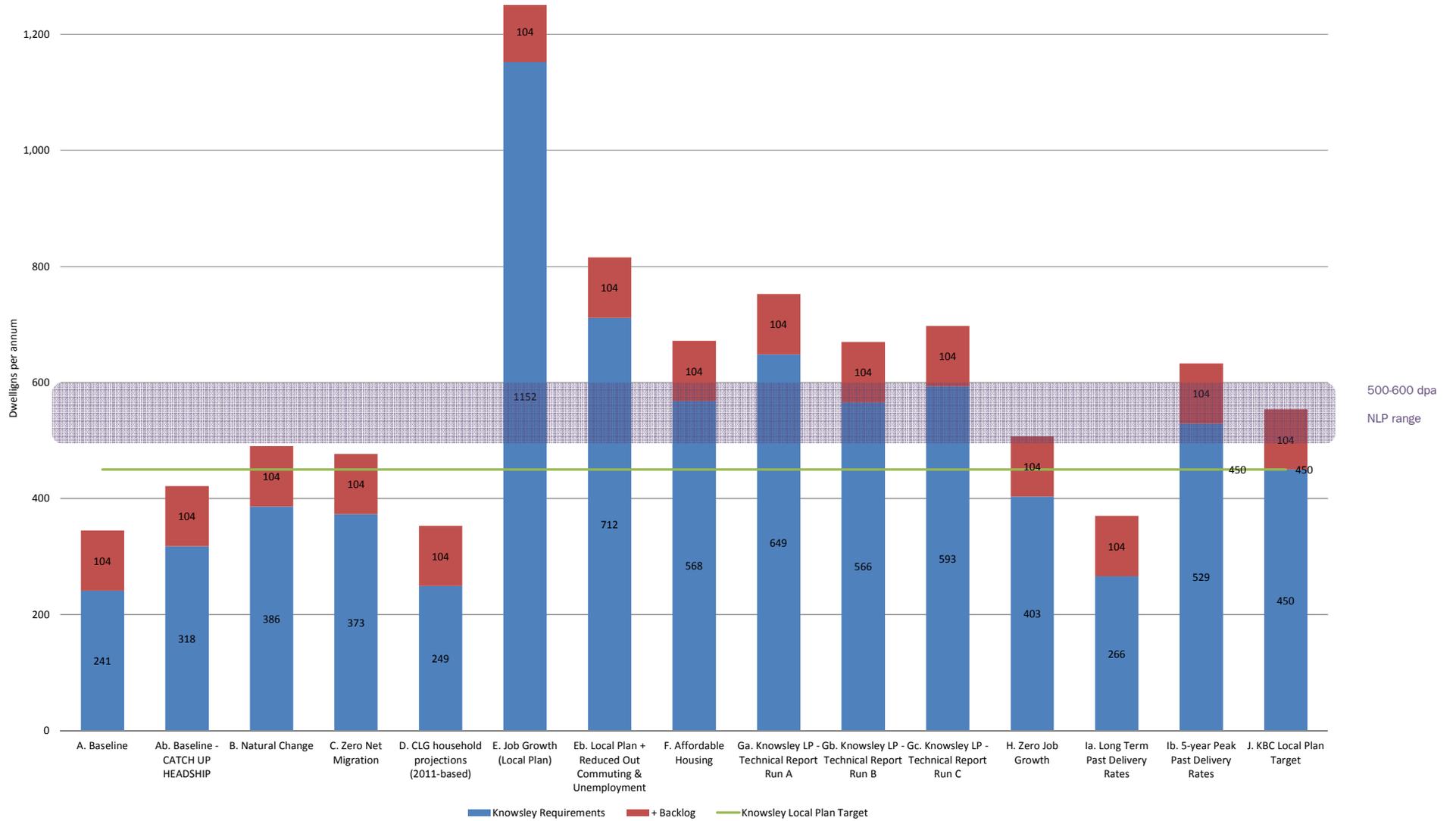
³ Commuting rate kept constant – for Knowsley, data from the 2011 APS and 2011 BRES identifies an LF ratio of **1.11** (62,400 employed people ÷ 56,093 jobs in Knowsley).

Table 2 Summary of NLP Scenarios

Scenario	Explanation	Annual dpa	+ allowance for backlog (+104 dpa)
A. Baseline	PopGroup baseline incorporating latest CLG household and Sub-National Population Projections.	241	345
Ab. Baseline – Catch up Headship Rates	As above, although post 2021 a higher rate of household formation has been assigned to ‘catch up’ to the earlier 2008-based household projections rate post 2021	318	422
B. Natural Change	All in or out migration removed from the modelling	386	490
C. Zero Net Migration	In/out migration equalised	373	477
D. CLG household projections (2011-based)	CLG household projections (2011-based)	249	353
E. Job Growth (Local Plan)	Translating 183.5ha into probable job growth (+816 per annum) based on 40% plot ratio and 50 sqm per job employment density.	1,152	1,256
Eb. Local Plan + Reduced Out Commuting & increased economic activity	As above, although the level of out commuting has been reduced and economic activity rate adjusted upwards	712	816
F. Affordable Housing	The level of affordable housing required in KBC’s SHMA	568	672
Ga. Knowsley LP - Technical Report Run A	Job growth target of 4,788 (Run A of the Planning for Employment Growth Technical Report.	649	753
Gb. Knowsley LP - Technical Report Run B	Job growth target of 3,171 (Run B of the Planning for Employment Growth Technical Report.	566	670
Gc. Knowsley LP - Technical Report Run C	Job growth target of 3,708 (Run C of the Planning for Employment Growth Technical Report.	593	697
H. Zero Job Growth	The level of housing required to generate zero job growth over the Plan period	403	507
Ia. Long Term Past Delivery Rates	Historic build rates over a longer term 16 year period (1997/8-2011/12)	266	370
Ib. 5-year Peak Past Delivery Rates	Historic build rates achieved during the peak 5-year period of delivery in the past 15 years (1995/96 to 1999/00))	529	633
J. KBC Local Plan Target	450 dpa constraint	450	554

Source: NLP PopGroup Model Runs

Figure 1 NLP Scenario Modelling



Source: NLP Analysis / PopGroup

- 3.7 The 15 modelled scenarios therefore seek to identify OAN through exploring a variety of demographic, housing and economic outcomes. Scenario A extrapolates the CLG household projections and represents a baseline demographic assessment upon which all the other scenarios are founded. This projections indicates a need for 241 dpa (345 dpa allowing for backlog), which is slightly lower than the 249 dpa in the CLG (interim) 2011-based household projections (Scenario D). The catch up headship rates scenario (Ab) suggests a higher requirement (318 dpa) to reflect a more optimistic, or faster, return to the long term household formation trend.
- 3.8 Scenario B, the Natural Change scenario, excludes any in/out migration. Whilst being relatively unrealistic, the higher level of growth (386 dpa, 490 dpa including backlog) demonstrates the extent to which net out-migration is driving population change. Table A.2.1 in Appendix 2 suggests that if the interaction of births and deaths is the sole determinant of population growth in the Borough over the Plan period, then the level of population growth would be around 7,465 (2011-28), more than two-and-a-half times the baseline Scenario's.
- 3.9 An even higher level of population growth is forecast when in/out migration is equalised (Scenario C), although because under this scenario the household size of in-migrants is larger, dwelling requirements are slightly lower than for Scenario B, at 373 dpa (477 dpa plus backlog).
- 3.10 The next group of scenarios explores the housing implications of various economic forecasts used by KBC in their '*Planning for Employment Growth Technical Report*' (July 2013), in line with the recommendations of the Government's draft Beta guidance. Scenario E provides an indication of the level of employment growth that could be generated by the provision of an additional 183.5ha of employment land (Policy CS4 of the PKLLP).
- 3.11 Based on conservative plot ratios and employment densities, it is suggested that around 14,680 additional jobs could be based in the Borough over the Plan period, or +816 per annum. Applying this as a constraint to the PopGroup modelling, and keeping commuting and economic activity rates constant, would result in a very high level of net in-migration, requiring an additional 1,152 dpa (1,256 dpa plus backlog). By reducing net out commuting and increasing economic activity rates to allow for this surge in job creation would require fewer in-migrants to take up the jobs, resulting in a more achievable figure of 712 dpa (Scenario Eb).
- 3.12 Scenarios Ga-Gc similarly aim for target levels of job growth, based on the Employment Growth Technical Report's runs A (+4,788 jobs); B (+3,171 jobs) and C (+3,708 jobs). As all three levels of job growth are significantly higher than the -3,225 job decline anticipated under the baseline model run (Scenario

A), the level of dwellings required are also higher, ranging from 566-649 dpa, or 670-753 dpa including backlog.

3.13 Scenario H demonstrates the implications of planning for a stable (i.e. zero) level of job growth, with a dwelling requirement of +403 dpa (507 dpa including backlog).

3.14 Scenarios F, Ia and Ib have not been modelled in PopGroup, but replicate the findings of the Council's PHGTR and indicate the very high level of affordable housing need (+568 dpa) and the extent to which high levels of residential development have been achieved in the past (+529 dpa) once the detrimental housing delivery impacts of the Council's constraint policy and the economic downturn have been excluded.

3.15 The final scenario (J) presents the implications of planning for 450 dpa (8,100 dwellings 2010 to 2028) in the PKLLP. This level of dwelling provision would exceed demographic requirements and to some extent boost the supply of housing in line with The Framework's requirement. As illustrated in Table A2.2 in Appendix 2, this could generate population growth of almost 13,000 and household growth of 7,350 between 2011 and 2028; more than achieving the Council's objective of stabilising the population.

3.16 However, it is important to note that due to the ageing population and declining number of economically active residents over time, this level of dwelling provision would only result in a very low level of job growth, of around 40 per annum. Taylor Wimpey and Redrow Homes consider that such a weak level of growth does not sit well alongside the Council's aspirations to significantly boost economic growth through the provision of 183.5ha of industrial/commercial land; nor does it align with any of the job growth scenarios modelled in the Employment Growth Technical Report. In this regard, we refer to the Government's draft Beta Guidance, which states:

'Where the supply of working age population (labour force supply) is less than the projected job growth, this will result in unsustainable commuting patterns and could reduce the resilience of local businesses. In such circumstances, plan makers will need to consider increasing their housing numbers to address these problems'.

4.0 **Conclusions**

4.1 KBC is progressing its Local Plan Core Strategy and has produced an evidence base examining what their local housing target should be and the broad approach to meeting those requirements. The PHGTP analysed a range of scenarios and concluded that a figure of 450 dpa would maximise wider social and economic benefits, whilst minimising potential adverse effects. This figure would seem low when it is suggested that the requirement should be a mid-point in the range of 194 – 1,048 dpa.

- 4.2 Taylor Wimpey and Redrow Homes consider that whilst certain aspects of the Council's approach to defining the OAN are to be welcomed (notably the recognition to make full provision for backlog; to exceed the base demographic projections and the desire to address the full need within KBC's own boundaries), there are clear shortcomings with the approach taken, with many of the scenarios modelled either being inappropriate (i.e. supply-based) or incorporating out of date information. Furthermore, by providing 450 dpa, this is likely to result in a very modest level of job growth that does not align fully with the Council's economic aspirations or their provision of 183.5ha of employment land in the PKLPCS. No economic modelling was undertaken by the Council to dovetail with the housing and demographic analysis.
- 4.3 In response to this and the Inspector's questions, NLP modelled a wide variety of demographic, economic and housing scenarios, interpreting the scenarios and their underlying assumptions in order to identify a narrower range of projections that represented objectively assessed needs. This resulted in a wide range of between 241dpa and 1,152 dpa (or 345 dpa – 1,256 dpa incorporating an allowance for backlog of 104 dpa).
- 4.4 NLP recognises that the definition of OAN is 'not an exact science' and an element of judgement is necessary, based on reasonable assumptions. The scenarios also need to be balanced alongside what is reasonable and is likely to happen in the future, and align with other elements of the Council's evidence base.
- 4.5 Nevertheless, in defining the OAN, it is considered that the following guiding principles should be applied, based on national guidance and KBC's own aspirations as set out in the PHGTR:
- 1 Household projections published by CLG provide the starting point estimate of overall housing need (Beta guidance; Scenario C of the PHGTR). However, whilst important to inform the baseline, such a scenario in isolation makes no allowance for the Council's economic growth aspirations or policy requirements to 'boost significantly' the level of housing;
 - 2 In defining a level of housing growth there is a need to address outstanding needs which have not been met as a result of past under-delivery (para 9.2.4 of the PHGTR). KBC themselves consider that this would involve adding an additional 104 dpa to the projections to meet this backlog (PHGTR para 9.9.3);
 - 3 There is a need to provide an increased level of flexibility to re-balance the housing market (PHGTR para 9.9.3);
 - 4 The OAN should go a significant way towards meeting the affordable housing needs of the local population, identified as being as high as 568 dwellings per annum in KBC's SHMA (PHGTR para 4.10.2);

- 5 There is a clear priority to stabilise the local population by supplying sufficient attractive and affordable housing options for all of those wishing to live in Knowsley (PHGTR para 9.9.6);
- 6 There is a need to provide an aspirational housing target that demonstrates an ambition to plan for growth and to meet identified needs, but critically not to an extent which is unrealistic (PHGTR para 9.9.7, Beta guidance). This would exclude the higher requirements modelled, such as the 1,152 Local Plan Job growth projection (Scenario E);
- 7 Knowsley should seek to meet its own housing requirements within its own Borough area (PHGTR para 9.9.1);
- 8 Recent historic build rates should be exceeded and do not represent a robust basis for forward planning; KBC acknowledges that these have been low and have not met housing needs (PHGTR para 9.9.1).
- 9 Whilst recognising that there is not a direct causal relationship between job growth and housing requirements, it is generally recognised that the two are nevertheless fundamentally related, and a level of housing provision that bears no relation to KBC's economic aspirations would result in internal inconsistencies in the Local Plan and have unsustainable consequences.

4.6 On the evidence contained within this Technical Paper, it is considered that an OAN for Knowsley Borough would constitute a figure somewhere in the range of **500 dpa to 600 dpa**, incorporating an allowance for backlog. This would, at a minimum, meet need and demand arising from future projected demographic change within the Borough. It would also support some economic growth, and would also be sufficient to deliver a suitable level of affordable housing in line with identified local needs.

4.7 As discussed in Matter 3, the economic performance of Knowsley lags behind the regional and national average. To arrest this decline, it is imperative that Knowsley provides sufficient housing to cater for its employment aspirations.

4.8 KBC has set out an ambitious employment land requirement for the plan period and to ensure sustainable levels of commuting, sufficient housing provision must also be provided. To provide less housing than the range identified above would aggravate the currently housing shortage, reduce affordability, increase the social housing waiting list and increase commuting levels.

4.9 The modelled economic growth scenarios demonstrate the clear divergence between the Local Plan's economic aspirations and its housing requirement. The annual dwelling requirement resulting from delivering 183.5 ha of employment land would be more than two-and-a-half times the 450 dpa housing requirement. The 450 dpa figure is also significantly below all of the 'going for growth' economic scenarios underpinning the Council's ELR. The justification

for not using the modelled baseline scenarios is on the basis that the housing requirement needs to align with the Council's economic aspirations for the Borough.

- 4.10 The bottom end of the range is approximate to the zero job growth scenario (H, plus backlog) and should represent the very minimum level the Council should seek to provide if it is seeking to stabilise the local economy, whilst recognising the economic challenges faced by the Borough given that a much higher proportion of the resident population will be economically inactive by 2028.
- 4.11 A lower housing requirement for the Borough as suggested by the (interim) CLG household projections would potentially lead to a much greater loss of economically active residents, intensifying the problem. Such a situation would not accord with the Government's clear commitment to securing economic growth in order to create jobs and prosperity (the Framework, § 18). It should be noted that 'over-provision' against a demographically modelled estimate of need is not considered by The Framework to be wrong in itself. Such an approach effectively deals with the 'market signals' element within The Framework (which could include backlog), and also reflects the acknowledged need to rebalance Knowsley's economy.
- 4.12 The top end of the range is closer to Scenario Ib (Peak Past delivery rates) and the mid-range of the three ELR Runs A, B and C (Scenarios Ga, Gb and Gc) if the backlog is excluded (566 dpa – 649 dpa). The top end of the range therefore seeks to balance the level of housing that would be needed to assist the Council in meeting its economic growth objectives and goes some way towards meeting the very high level of affordable housing need (568 dpa, or 672 dpa including backlog), with a level that is reasonable and achievable, based on past delivery and the strength of demand in the Borough.
- 4.13 It is important to note that whilst this 500-600 dpa range exceeds the 450 dpa figure in the PKLPCS, the PHGTR demonstrates that there is significant 'headroom' built into the Council's housing land supply such that the target of 8,100 could be exceeded by 1,264 dwellings should the dwellings be completed as projected. The Council states that this provides flexibility within the housing trajectory over the plan period and could enable a requirement of 520 dpa to be achieved without the need for further allocations.
- 4.14 It is considered that a figure at or around 520 dpa could be accommodated by the existing Core Strategy and would better represent the economic growth aspirations of the Council and the Framework to meet objectively assessed needs.

APPENDIX 1: DATA ASSUMPTIONS

Table A.1.1 PopGroup Modelling Assumptions

DEMOGRAPHIC	Scenario A: Baseline (Scenario Ab: Catch up Headship)	Scenario B – Natural Change	Scenario C – Zero Net Migration
Population			
Baseline Population	A 2010 baseline population is taken from the 2010 Mid-year population estimates for Knowsley Borough Council, split by age cohort and gender. The population for 2011-2021 is constrained to the 2011-based SNPP, by age and sex.		
Births	Future change assumed in the Total Fertility Rate [TFR] uses the birth projections from the ONS 2010-based Interim SNPP. This in turn is used to derive future projected TFRs through PopGroup.		
Deaths	Future change assumed in the SMR uses the death projections from the ONS 2010-based Interim SNPP. This in turn is used to derive future projected SMRs through PopGroup.		
Internal Migration	Gross domestic in and out migration flows are adopted based on forecast migration in Knowsley from the ONS 2010-based SNPP for 2010, and using the 2011-based Interim SNPP for the actual internal migration flows 2011-2021. This is the sum of internal migration (elsewhere in England) and cross-border migration (elsewhere in the UK) (SNPP Table 5). Internal migration includes moves to all other Local Authority areas, including to neighbouring areas (i.e. a move of two streets might be classed as internal migration if it involves a move to another LA area). Beyond 2021, a trend rate is applied.	Internal in and out migration is set at zero over the Plan period.	Gross domestic in and out migration flows are adopted based on forecast migration in the borough from the ONS 2010-based SNPP for 2010, and using the 2011-based Interim SNPP for the actual internal migration flows 2011-2021. To achieve zero net migration the difference between in and out flows is split to equalise the in and out flows at the middle point of the two.
International Migration	Gross international in and out migration flows are adopted based on forecast migration in Knowsley from the ONS 2010-based SNPP for 2010, and using the 2011-based Interim SNPP for the actual internal migration flows 2011-2021. Beyond 2021, a trend rate is applied.	International in and out migration is set at zero over the Plan period.	As above, but for international rather than internal migration.

DEMOGRAPHIC	Scenario A: Baseline (Scenario Ab: Catch up Headship)	Scenario B – Natural Change	Scenario C – Zero Net Migration
Propensity to Migrate (Age Specific Migration Rates)	Age Specific Migration Rates (ASMigR) for both in and out domestic migration is based upon the age profile of migrants to and from Knowsley in the 2010-based SNPP. These identify a migration rate for each age cohort within the borough (for both in and out flows separately) which is applied to each individual age providing an Age Specific Migration Rate. This then drives the demographic profile of those people moving into and out of the Borough (but not the total numbers of migrants).		
Housing			
Headship Rates	<p>Headship rates that are specific to Knowsley and forecast over the period to 2021 were taken from the government data which was used to underpin the 2011-based CLG household forecasts and applied to the demographic forecasts for each year as output by the PopGroup model. These headship rates were split by age cohort and by household typology. These are the most up-to-date headship rates available at the time of writing. Beyond 2021 this is assumed to resume the long term trends identified within the 2008-based household projections with index trends from the 2008-based projections applied to the 2021 end point of the 2011-based household projections.</p> <p>For the Baseline sensitivity test (Ab), a different set of headship rates has been modelled using higher/lower household representation rates post 2021:</p> <ul style="list-style-type: none"> • Catch Up = Change post 2021 is targeted to achieve CLG 2008-based Household Projections end rates by 2028 (generally the High Rate). 		
Population not in households	The number of population not in households (e.g. those in institutional care) is similarly taken from the assumptions used to underpin the 2011-based CLG household forecasts. No change is assumed to the rate of this from the CLG identified rate.		
Vacancy / 2nd Home Rate	A vacancy and second homes rate is applied to the number of households, representing the natural vacancies/not permanently occupied homes which occur within the housing market. This means that more dwellings than households are required to meet needs. The vacancy/second home rate in Knowsley totals 3.6% (estimated using data from the Council Tax Base for Formula Grant Purposes (October 2012), held constant over the forecast period.		
Economic			

DEMOGRAPHIC	Scenario A: Baseline (Scenario Ab: Catch up Headship)	Scenario B – Natural Change	Scenario C – Zero Net Migration
Economic Activity Rate	<p>Age and gender specific economic activity rates are used. The basis for this is ONS 2006-based National Labour Force Projections. The economic activity annual growth rates for each age cohort from these national projections are applied to the Census 2001 economic activity profile for the borough across the forecast period. At 2011 these have been rebased from their 2011 estimate using a uniform adjustment to all age cohorts to meet current total economic activity in the Borough from the Annual Population Survey (APS). These are assumed to remain the same as the projection with the exception of an adjustment to take account of changing pension ages beyond that already taken into account in the ONS 2006-based projections (i.e. to account for pension age increases for both men and women above age 65).</p> <p>In this regard, 1% has been added to the female 60-64 age cohort activity rates in 2011, 2% in 2012, 3% in 2013 and so forth up to 8% in 2018. This 2018 rate has then been held constant across the remainder of the forecasting period. Furthermore, 1% has been added to the Male 65-69 and Female 65-69 age cohorts' economic activity rates in 2019 and 2% in 2020. These 2020 rates were then held constant across the forecasting period.</p>		
Commuting Rate	<p>A standard net commuting rate is inferred through the modelling using a Labour Force Ratio which is worked out using the formula: (A) Number of employed workers living in area ÷ (B) Number of workers who work in the area (number of jobs).</p> <p>For Knowsley, data from the 2011 APS and 2011 BRES identifies an LF ratio of 1.11 (62,400 employed people ÷ 56,093 jobs in Knowsley).</p> <p>This has not been flexed over the forecasting period with no assumed increase or reduction in net commuting rates.</p>		
Unemployment	<p>To calculate the unemployment rate, NLP took Jan 2011–Dec 2011 NOMIS unemployment figures (11.8% in Knowsley) to equate to the 2011 rates, and the 2012 NOMIS equivalents (12.6%) for 2012. NLP kept these figures constant for 2013 and 2014 to reflect initial stabilisation at the current high rate, and then gradually reduced the rate on a linear basis to the long term average of 10.01% to 2019.</p> <p>This figure was then held constant to the end of the forecasting period on the grounds that as the economy grows out of recession unemployment is likely to fall back to a similar rate as seen pre-recession.</p>		

EMPLOYMENT FACTORS	Scenario E: Local Plan Job Growth	Scenario H: Zero Job Growth	Scenario G: Employment Technical Report Runs A, B & C
Population			
Baseline Population	A 2010 baseline population is taken from the 2010 Mid-year population estimates for Knowsley, split by age cohort and gender. The population for 2011-2021 is constrained to the 2011-based SNPP for the borough, by age and sex.		
Births	Future change assumed in the Total Fertility Rate [TFR] uses the birth projections from the ONS 2010-based Interim SNPP. This in turn is used to derive future projected TFRs through PopGroup.		
Deaths	Future change assumed in the SMR uses the death projections from the ONS 2010-based Interim SNPP. This in turn is used to derive future projected SMRs through PopGroup.		
Internal Migration	<p>Internal in-migration and outmigration is flexed (inflated or deflated) to achieve the necessary number of economically active people to underpin the economy in the Borough in this employment scenario.</p> <p>This was based on the job growth aspirations as set out in the Local Plan to 2028 on a pro-rata basis (equal to 815 job growth per annum for Knowsley).</p>	<p>Internal in-migration and outmigration is flexed (inflated or deflated) to achieve the necessary number of economically active people to underpin the economy in the Borough in this employment scenario.</p> <p>This was based on a zero job growth-scenario over the course of the plan period.</p>	<p>Internal in-migration and outmigration is flexed (inflated or deflated) to achieve the necessary number of economically active people to underpin the economy in both Borough in this employment scenario.</p> <p>These three runs were based on the differing job growth aspiration runs as set out in the Council Employment Technical Paper (+266 jobs per annum, +176 jobs per annum and +206 jobs per annum).</p>
International Migration	As above, but for international rather than internal migration.		
Propensity to Migrate (Age Specific Migration Rates)	Age Specific Migration Rates (ASMigR) for both in and out domestic migration are based upon the age profile of migrants to and from Knowsley in the 2010-based SNPP. These identify a migration rate for each age cohort within each borough (for both in and out flows separately) which is applied to each individual age providing an Age Specific Migration Rate. This then drives the demographic profile of those people moving into and out of the Borough (but not the total numbers of migrants).		

EMPLOYMENT FACTORS	Scenario E: Local Plan Job Growth	Scenario H: Zero Job Growth	Scenario G: Employment Technical Report Runs A, B & C
Housing			
Headship Rates	Headship rates that are specific to Knowsley Borough and forecast over the period to 2021 were taken from the government data which was used to underpin the 2011-based CLG household forecasts and applied to the demographic forecasts for each year as output by the PopGroup model. These headship rates were split by age cohort and by household typology. These are the most up-to-date headship rates available at the time of writing. Beyond 2021 this is assumed to resume the long term trends identified within the 2008-based household projections with index trends from the 2008-based projections applied to the 2021 end point of the 2011-based household projections.		
Population not in Households	The number of population not in households (e.g. those in institutional care) is similarly taken from the assumptions used to underpin the 2011-based CLG household forecasts. No change is assumed to the rate of this from the CLG identified rate.		
Vacancy / 2nd Home Rate	A vacancy and second homes rate is applied to the number of households, representing the natural vacancies/not permanently occupied homes which occur within the housing market. This means that more dwellings than households are required to meet needs. The vacancy/second home rate in Knowsley Borough totals 3.6% (estimated using data from the Council Tax Base for Formula Grant Purposes (October 2012), held constant over the forecast period.		
Economic			
Economic Activity Rate	<p>Age and gender specific economic activity rates are used. The basis for this is ONS 2006-based National Labour Force Projections. The economic activity annual growth rates for each age cohort from these national projections are applied to the Census 2001 economic activity profile for the borough across the forecast period. At 2011 these have been rebased from their 2011 estimate using a uniform adjustment to all age cohorts to meet current total economic activity in the Borough from the Annual Population Survey (APS). These are assumed to remain the same as the projection with the exception of an adjustment to take account of changing pension ages beyond that already taken into account in the ONS 2006-based projections (i.e. to account for pension age increases for both men and women above age 65).</p> <p>In this regard, 1% has been added to the female 60-64 age cohort activity rates in 2011, 2% in 2012, 3% in 2013 and so forth up to 8% in 2018. This 2018 rate has then been held constant across the remainder of the forecasting period. Furthermore, 1% has been added to the Male 65-69 and Female 65-69 age cohorts' economic activity rates in 2019 and 2% in 2020. These 2020 rates were then held constant across the forecasting period.</p>		

EMPLOYMENT FACTORS	Scenario E: Local Plan Job Growth	Scenario H: Zero Job Growth	Scenario G: Employment Technical Report Runs A, B & C
Commuting Rate	<p>A standard net commuting rate is inferred through the modelling using a Labour Force Ratio which is worked out using the formula: (A) Number of employed workers living in area ÷ (B) Number of workers who work in the area (number of jobs).</p> <p>For Knowsley Borough, data from the 2011 APS and 2011 BRES identifies an LF ratio of 1.11 (62,400 employed people ÷ 56,093 jobs in Knowsley).</p> <p>This has not been flexed over the forecasting period with no assumed increase or reduction in net commuting rates.</p>		
Unemployment	<p>To calculate the unemployment rate, NLP took Jan 2011–Dec 2011 NOMIS unemployment figures (11.8% in Knowsley) to equate to the 2011 rates, and the 2012 NOMIS equivalents (12.6%) for 2012. NLP kept these figures constant for 2013 and 2014 to reflect initial stabilisation at the current high rate, and then gradually reduced the rate on a linear basis to the long term average of 10.01% to 2019.</p> <p>This figure was then held constant to the end of the forecasting period on the grounds that as the economy grows out of recession unemployment is likely to fall back to a similar rate as seen pre-recession.</p>		

APPENDIX 2: MODELLING RESULTS

Table A.2.1 Emerging PopGroup Modelling Results – Demographic Led

KNOWSLEY	Demographic led							
	A. Baseline	Ab. Baseline - CATCH UP HEADSHIP	B. Natural Change	C. Zero Net Migration	D. CLG household projections (2011- based)	E. Job Growth (Local Plan)	Eb. Local Plan + Reduced Out Commuting & Unemployment	F. Affordable Housing
	Population Change	2,871	2,871	7,464	9,197	-	44,850	24,827
of which Natural Change	8,211	8,211	7,464	9,197	-	13,928	11,109	-
of which Net Migration	-5,340	-5,340	0	0	-	30,922	13,718	-
Household Change	3,952	5,203	6,329	6,113	2,405	18,882	11,661	-
Dwelling Change	4,099	5,398	6,565	6,341	2,495	19,588	12,096	-
<i>Dwellings p.a.</i>	241	318	386	373	249	1,152	712	568
Economic Activity	-5,125	-5,125	-2,989	-1,840	-	15,943	5,859	-
Jobs	-3,225	-3,225	-1,493	-561	-	13,855	13,874	-
Jobs p.a.	-190	-190	-88	-33	-	815	816	-

Table A.2.2 Emerging PopGroup Modelling Results – Employment Led

KNOWSLEY	Employment led						
	Ga. Knowsley LP - Technical Report Run A	Gb. Knowsley LP - Technical Report Run B	Gc. Knowsley LP - Technical Report Run C	H. Zero Job Growth	Ia. Long Term Past Delivery Rates	Ib. 5-year Peak Past Delivery Rates	J. KBC Local Plan Target
Population Change	22,072	18,338	19,583	11,037	-	-	12,980
of which Natural Change	10,718	10,203	10,374	9,206	-	-	9,797
of which Net Migration	11,354	8,135	9,208	1,831	-	-	3,183
Household Change	10,629	9,270	9,723	6,608	-	-	7,351
Dwelling Change	11,026	9,616	10,086	6,855	-	-	7,626
Dwellings p.a.	649	566	593	403	266	529	449
Economic Activity	4,420	2,531	3,161	-1,163	-	-	-313
Jobs	4,513	2,982	3,493	-12	-	-	676
Jobs p.a.	265	175	205	-1	-	-	40

Source: NLP Analysis