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Appendix 5: Implications of the 2012-Based SNPP

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Subject   Updated Labour Supply Modelling

1.0   Introduction

1.1   This Appendix to the High Peak and Staffordshire Moorlands ELR Demand
         Update presents the results of additional modelling exploring the implications
         of the updated 2014 Housing Needs Assessment for the two authorities.

1.2   Section 7.0 of the ELR Update originally modelled two labour supply scenarios
         to provide a benchmark for comparison with the econometric demand
         projections and past take up rates. The first of these two scenarios modelled
         the implications of the ONS 2011-based (Interim) Sub-National Population
         Projections [SNPP] incorporated into a baseline PopGroup model for each
         authority area. The assumptions underpinning the modelling (and specifically
         how the 2011-based SNPP figures were extrapolated post 2021) are set out in
         High Peak Borough Council's SHMA and Housing Needs: Final Report
         Appendix 1 (April 2014).

1.3   For High Peak, the baseline projection (Scenario 4) indicated population
         growth of 14,733 over the period 2011-2031; household growth of 8,731 and
         an equivalent housing requirement of 451 dpa. This translated into an
         increase of 1,595 economically active residents, and 1,492 jobs over the Plan
         period. For Staffordshire Moorlands, Scenario 4 indicated population growth of
         6,436 over the period 2011-2031; household growth of 4,534 and an equivalent
         housing requirement of 238 dpa. This translated into a decrease in the number
         of economically active residents (by -3,745), and -2,011 jobs over the Plan
         period.

1.4   The second of the original labour supply scenarios (Scenario 5) modelled the
         employment land implications of the upper end of the OAN Housing range for
         High Peak and Staffordshire Moorlands (470 dpa and 440 dpa respectively).
         Whilst for High Peak the net job requirement under this scenario was the same
         as for Scenario 4 (as the key difference related to household formation rates
         applied to the same population base), for Staffordshire Moorlands the job
         growth increased to +1,997 over the 20-year period.

1.5   This job growth was subsequently translated into employment land
         requirements by applying standard employment densities, plot ratios and
         making an allowance for vacancies, a margin of choice and the replacement of

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losses. The results of the previous labour supply modelling exercise are presented in Table 1.1. It indicates that for High Peak, the two Scenarios identified a need for around 44ha of B-class land. For Staffordshire Moorlands, Scenario 4 identified a need for 26ha, whilst Scenario 5 identified a need for 38ha.

Table 1.1   High Peak and Staffordshire Moorlands Labour Supply Assessments 2011-31 (ha)

	Net Job Growth 2011-31		Floorspace Requirements	Land requirements (net)	Employment land lost	Margin of choice	Land requirements (gross)
	All	B-Class					
High Peak							
Scenario 4: 2011-based (interim) ONS SNPP	+1,492	+650	39,735	**9.93**	28.00	5.72	**43.65**
Scenario 5: Housing Needs– 470 dpa							
Staffordshire Moorlands							
Scenario 4: 2011-based (interim) ONS SNPP	-2,011	-1,312	-26,664	**-6.67**	30.00	2.81	**26.15**
Scenario 5: Housing Needs– 440 dpa	+1,997	+259	22,461	**5.62**	30.00	2.81	**38.43**

Source: NLP Analysis, PopGroup

1.6   This Appendix presents the results of three updated scenarios:

1   Re-running the two existing labour supply models for both High Peak and Staffordshire Moorlands, with the revised baseline and Objectively Assessed Need for housing identified in the 2014 SHMA Update at their core; and,

2   Modelling the employment land implications of the 360 dpa housing requirement identified in the emerging High Peak Local Plan Submission Version (April 2014), and 300 dpa identified in the Staffordshire Moorlands Adopted Core Strategy (March 2014).

1.7   This new modelling work covers the period 2011 to 2031 and will help to ensure that the plans are sound, positively prepared, justified, effective and consistent. It will aid the formulation of a clear economic strategy and assist in ensuring the necessary delivery of employment sites.

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2.0 Methodology

Scenario 6a/6b: Modelling the OAN Housing Range

2.1 NLP produced a SHMA on behalf of the two local authorities of High Peak Borough Council and Staffordshire Moorlands District Council in June 2014. The identification of objectively assessed need [OAN] for housing was at the heart of the study, based upon a range of housing, economic and demographic factors, trends and forecasts. Following the submission of the SHMA, the demographic data which underpinned NLP's modelling work was updated.

2.2 This new data, the 2012-based Sub-National Population Projections [SNPP], was published by ONS on 29th May 2014. It replaces the 2011-based (interim) SNPP equivalents which formed the foundation for the modelling in the SHMA. NLP subsequently produced an update to the SHMA[1] which tested the on-going validity of the housing requirements identified in the original SHMA in the light of the 2012-based SNPP. This sought to ensure that the evidence base upon which the respective Councils' Local Plans are to be founded was as robust as possible moving forward to their respective EiPs.

2.3 NLP's report concluded that, taking this evidence into account (and applying similar considerations to backlog whilst accelerating household formation rates to redress worsening housing market signals as before), would point to a **range of 280 dpa to 420 dpa for High Peak; and 210 dpa to 430 dpa for Staffordshire Moorlands.**

2.4 For High Peak, the Catch Up Headship Rate Scenario, which formerly comprised the upper end of the range in the 2014 SHMA, reduced from 464 dpa to 279 dpa. Retaining this scenario as a marker for the OAN range was intended to align with the demographic modelling and allow for some acceleration to help address the worsening market signals being experienced in the Borough. At the upper end of the range, it was recommended that the CLG (interim) 2011-based Household Projections (420 dpa) should also be retained.

2.5 For Staffordshire Moorlands, whilst the difference between the two sets of projections was less pronounced, it was also considered that the much-reduced 2012-based SNPP could justify a lowering of the OAN. Applying the same logic as before, and taking the Baseline demographic projections as the starting point, this suggested a housing need figure of around 210 dpa at the lower end of the range. At the upper end, retaining the Oxford Economics scenario as a proxy to allow for realistic economic growth would support a figure of around 430 dpa.

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[1]NLP (2014): Housing Needs Study: 2012-based SNPP Update

2.6　　　These scenarios have been modelled in PopGroup to produce output sheets detailing population growth, the number of economically active residents and job growth as before. The detailed output sheets are presented in Appendix 6.

2.7　　　The results are set out in Table 2.1. They indicate that for High Peak Borough, a dwelling requirement in the order of 5,577, or around 280 dpa, could result in a decrease in the economically active population by almost 1,500 over the period 2011-2031, despite the overall population of the Borough increasing by over 7,000. This is due to the Borough's ageing population - the projections suggest that the number of residents of working age will decline (by 4,031), whilst the number of residents over 65 will increase substantially, by 10,803. At the upper end of the range, the delivery of 420 dpa would more than double the level of population growth and, as a result, would result in a positive level of job growth in the order of 2,459 between 2011 and 2031.

2.8　　　As regards Staffordshire Moorlands, a similar pattern emerges, with the delivery of just 210 dpa resulting in a level of population growth (+2,554) that is insufficient to reverse the decline in the numbers of economically active residents and hence the number of jobs that could be supported in the District (-2,026). More than doubling the level of housing provided over the Plan period to 430 dpa would have a significant impact on the number of jobs supported, with the PopGroup model suggesting an uplift in the population by almost 16,500 people which would lead to an increase in the number of economically active residents by almost 3,000, and an increase in the number of jobs by almost 2,180 between 2011 and 2031.

Table 2.1   High Peak and Staffordshire Moorlands PopGroup Modelling Outputs for OAN Range

	Population Growth	H'hold Growth	Dwellings Growth	Change in Economically Active Residents	Change in Jobs
High Peak Borough					
Scenario 6a: Lower End of OAN Range: 280 dpa 2012-based ONS SNPP Baseline Scenario A (Catch Up headship rates)	7,047	5,348	5,577	-1,483	-623
Scenario 6b: Upper End of OAN Range: 420 dpa CLG 2011-based Household Projections	15,001	8,056	8,400	+3,075	+2,459
Staffordshire Moorlands District					
Scenario 6a: Lower End of OAN Range: 210 dpa 2012-based ONS SNPP Baseline Scenario A (Index headship rates)	2,554	3,517	3,671	-4,248	-2,026
Scenario 6b: Upper End of OAN Range: 430 dpa Oxford Economics Job-led Scenario	16,493	8,201	8,561	+2,967	+2,179

Source: NLP Analysis, PopGroup

2.9   The labour supply implications of these scenarios have been modelled by NLP to take account of economic activity rates and future pension age changes as outlined in current national policy.

2.10   This approach assumes that existing commuting relationships (identified from 2011 Census economic activity rates and 2011 BRES jobs data), whereby significantly more people commute out of both High Peak and Staffordshire Moorlands on a daily basis for work, are maintained over the plan periods. As such, both High Peak Borough and Staffordshire Moorlands District are assumed to continue to act as net exporters of labour.

2.11   Unemployment rates were also calculated for the two areas using the latest NOMIS (modelled) unemployment figures, subsequently reduced over time to equate to the long term historic average for both areas and held constant to the end of the plan periods.

2.12   Incorporating these job growth figures into the ELR model as before involved applying the HCA's employment densities (adjusted to reflect the fact that these are total jobs, rather than FTEs); applying a similar B1/B2/B8 split as per the econometric modelling (adjusted over time) and using a standard plot ratio of 40%.

2.13   Table 2.2 presents the results of the Housing OAN range of labour supply scenarios (6a and 6b) for High Peak Borough and Staffordshire Moorlands District. Unsurprisingly, the lower end of the OAN range for both authorities (280 dpa for High Peak, 210 dpa for Staffordshire Moorlands) results in a low level of job growth and consequently minimal (net) employment land requirements. This in the order of 3.1ha for High Peak and, given negative job growth, -6.5ha for Staffordshire Moorlands.

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Table 2.2   High Peak and Staffordshire Moorlands Scenario 6 Labour Supply Assessments 2011-31 (ha)

	Net Population Growth	Net Job Growth 2011-31		Floorspace Requirements	Land Requirements (net)	Employment land lost	Margin of choice	Land requirements (gross)
		All	B-Class	Sqm	Ha	Ha	Ha	Ha
High Peak								
Scenario 6a: Lower End of OAN Range: 280 dpa 2012-based ONS SNPP Baseline Scenario A (Catch Up headship rates)	7,047	-623	-276	12,285	**3.07**	28.00	5.72	**36.79**
Scenario 6b: Upper End of OAN Range: 420 dpa CLG 2011-based Household Projections	15,001	+2,459	+1,074	111,128	**12.37**	28.00	5.72	**46.09**
Staffordshire Moorlands								
Scenario 6a: Lower End of OAN Range: 210 dpa 2012-based ONS SNPP Baseline Scenario A (Index headship rates)	2,554	-2,026	-1,281	-25,816	**-6.45**	30.00	2.81	**26.36**
Scenario 6b: Upper End of OAN Range: 430 dpa Oxford Economics Job-led Scenario	16,493	+2,179	+367	23,990	**6.00**	30.00	2.81	**38.81**

Source: NLP Analysis, PopGroup

2.14   As the updated model runs apply the same basic assumptions and data inputs (with the only modification being the level of future housing delivery), it is unsurprising that they display a clear linear progression, with the higher levels of job growth increasing the level of floorspace and land requirements accordingly.

2.15   The significantly higher levels of job growth that could be sustained at the upper end of the OAN ranges (420 dpa and 430 dpa for High Peak and Staffordshire Moorlands respectively) would generate B-class land requirements of 12.4ha and 6.0ha for High Peak Borough and Staffordshire Moorlands District respectively.

2.16   When an allowance is made for losses and a margin of choice, this would uplift the (gross) employment land need to between 36.8ha and 46.1ha for High Peak Borough, and between 26.4ha and 38.8ha for Staffordshire Moorlands District.

Scenario 7: Modelling the Local Plan Housing Requirements

2.17   NLP also modelled the respective Councils' housing requirements as set out in the High Peak Local Plan Submission Version (April 2014) at 360 dpa; and Staffordshire Moorlands' Adopted Core Strategy (March 2014) at 300 dpa.

2.18   The results of the model runs are displayed below, with the accompanying PopGroup output sheets attached in Appendix 6.

Table 2.3   High Peak and Staffordshire Moorlands Scenario 7 Labour Supply Assessments 2011-31 (ha)

	Net Population Growth	Net Job Growth 2011-31		Floorspace Requirements	Land Requirements (net)	Employment land lost	Margin of choice	Land requirements (gross)
		All	B-Class	Sqm	Ha	Ha	Ha	Ha
High Peak								
Scenario 7: 360 dpa Emerging Local Plan Housing Requirement	11,922	+1,293	+563	35,409	**8.85**	28.00	5.72	**42.57**
Staffordshire Moorlands								
Scenario 7: 300 dpa Adopted Core Strategy Housing Requirement	9,697	-25	-497	2,754	**0.69**	30.00	2.81	**33.50**

Source: NLP Analysis, PopGroup

2.19   As the housing requirements sit roughly mid-way within the OAN range of housing set out in Scenarios 6a and 6b for both districts above, it is unsurprising that the resultant employment land requirements also sit approximately halfway in the range of requirements. High Peak's 360 dpa equates to a need for 42.6ha of employment land (gross), whilst Staffordshire Moorlands' 300 dpa could equate to a need for 33.5ha of B-class employment land.

3.0   **Implications**

3.1   In interpreting the outputs of this Appendix, regard should be had to the National Planning Practice Guidance. This states that Local Authorities should develop an idea of future economic needs based on a range of data and forecasts of quantitative and qualitative need. In this respect, planning for employment growth should avoid relying upon using single sources of data or projections which tend to rely upon a number of different variables which are inevitably subject to change.

3.2   It is also important to recognise that there are inevitable uncertainties and limitations associated with modelling assumptions under any of the future growth scenarios considered. For example, there are some inherent limitations to the use of local level economic forecasts, particularly in the context of significant recent changes in the economy. For example, economic forecasts are regularly updated and the resulting employment outputs will change over the plan period.

3.3   As noted in the main body of the ELR, it is stressed that labour supply approaches are generally more conservative given that they often relate to a declining working age population. Furthermore, whilst housing growth and employment requirements are clearly related, it is questionable whether there is a direct causal relationship between the two, particularly once considerations relating to changing commuting practices, fluctuating unemployment rates and economic activity rates are taken into account.

3.4   Nevertheless, it is clear from the updated modelling that the revised labour supply forecasts generate employment land requirements that are broadly consistent with the previously modelled projections.

3.5   Figure 3.1 compares the updated labour supply scenarios (incorporating the revised OAN range for both authorities and their preferred housing requirements) against the two original labour supply scenarios modelled in the main body of the ELR. For High Peak, the previously modelled upper end of the range (Scenario 5) is slightly below the updated version using the 2012-based SNPP (Scenario 6b) – 43.7ha compared to 46.1ha. However, modelling the employment implications from delivering a 360 dpa housing requirement (Scenario 7) results in a figure (42.6ha) very similar to the previously modelled scenarios.

3.6   As for Staffordshire Moorlands, the latest labour supply scenarios suggest B-Class land requirements that are also very similar to the equivalent modelled scenarios in the main body of the ELR. Scenario 4, which comprised the original 2011-based SNPP, identified a need for 26.15ha, whilst its updated equivalent, Scenario 6a (the bottom end of the OAN range), suggests a requirement for 26.4ha. Similarly, the original Labour Supply Scenario 5 for SMDC identified a need for 38.4ha, which is approximate to the upper end of the re-modelled OAN range (Scenario 6b, which indicates a need for 38.8ha). Furthermore, SMDC's adopted Core Strategy housing requirement of 300 dpa equates to a figure of 33.5ha of B-class employment land. This sits roughly halfway within the range.

Figure 3.1   Comparison of Labour Supply Modelling Scenarios
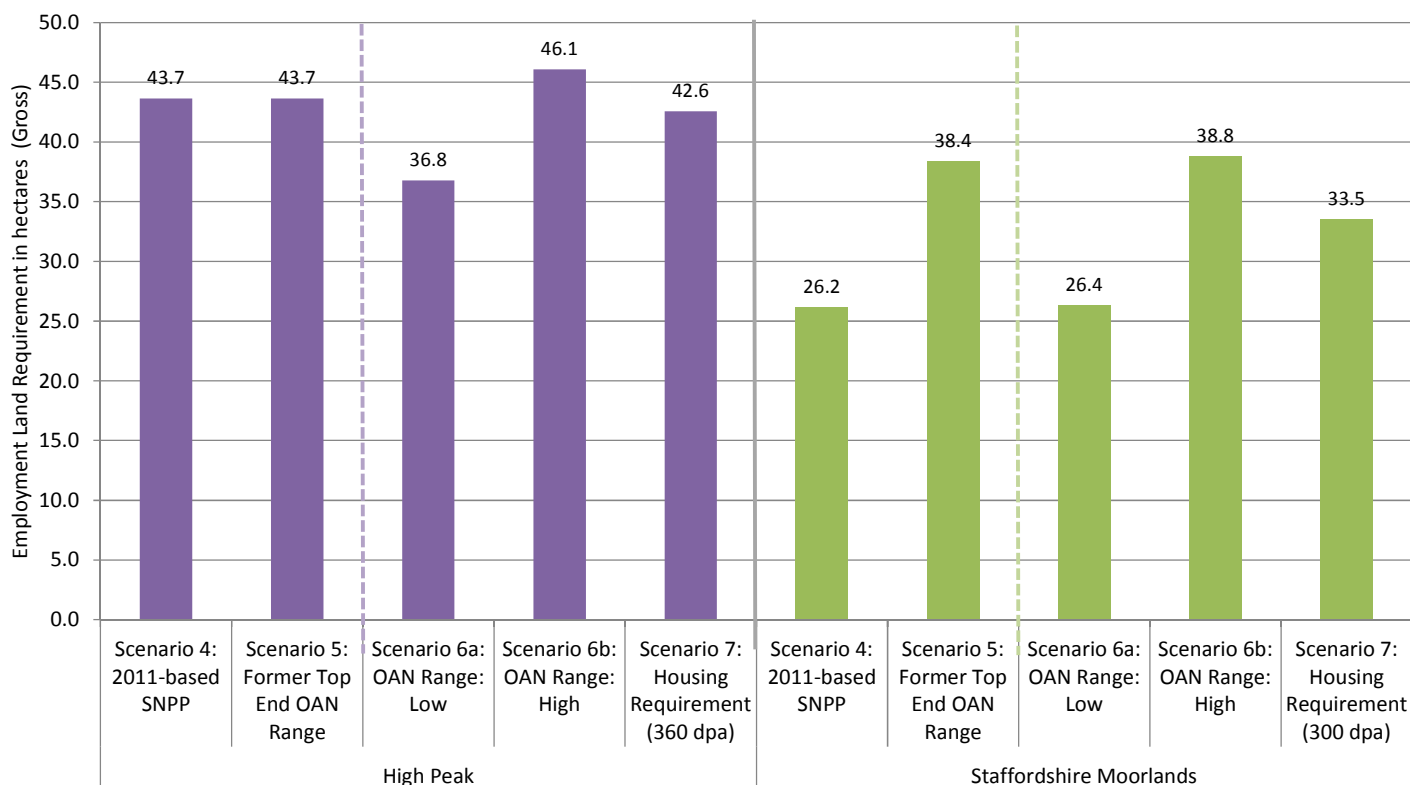
3.7   The ELR has concluded that a range of between 40ha and 80ha (gross) of employment land may be considered appropriate to meet High Peak's employment land needs to 2031. This is approximate to the Labour Supply Scenarios at the lower end and the Past Take Up Rate projection at the upper end.

3.8   The new labour supply scenarios for High Peak Borough start from 37ha at the bottom end, through to 43ha if the housing requirement of 360 dpa is modelled, and up to 46ha at the upper end of the range.

3.9   On this basis, it is clear that if the 2012-based SNPP data had been available at the time of the original modelling, the outputs from the labour supply scenarios would not have produced significantly different figures from before. On this basis, and through the application of the same qualitative and quantitative considerations as set out in Section 7.0, it appears reasonable to retain the 40ha recommendation at the bottom end of the range, whilst the upper end (80ha) would be similarly unaffected.

3.10   For Staffordshire Moorlands a range of 25ha to 45ha (gross) of employment land was originally considered appropriate to 2031. This was approximate to the Labour Supply Scenarios at the lower end and the OE Baseline/Policy On projections at the upper end.

3.11   The updated labour force modelling work produces employment land projections ranging from 26ha at the bottom end of the range (Scenario 6a), through to 34ha if the housing requirement of 300 dpa is modelled (Scenario 7) and up to 39ha modelling the upper end of the OAN range (Scenario 6b).

3.12   The re-modelled labour supply scenarios therefore produce very similar results to the equivalent scenarios in the previous modelling work. On the basis that it is still appropriate to apply the same quantitative and qualitative considerations set out in Section 7.0 to the definition of the range of employment land needs, then the aforementioned range of 25ha to 45ha remains robust. Such a range would encompass the outputs of all three of the updated labour supply scenarios.

Appendix 6   Modelling Results