STAFFORD BOROUGH

**REVIEW OF THE
EMPLOYMENT LAND STUDY**

FUTURE LAND ESTIMATION

TECHNICAL APPENDIX REPORT

AUGUST 2010

Author: Mark Sproston, Planning Information and Research Officer,
          Research Unit, Development Services Directorate
Tel.   01785 277359
email: mark.sproston@staffordshire.gov.uk

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Creator	Mark Sproston
Contact details	Research Unit, Development Services Directorate Staffordshire County Council Riverway, Stafford, ST16 3TJ t: 01785 27 7359 e: mark.sproston@staffordshire.gov.uk
Additional contributions	Jonathan Vining
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1.   The Current Employment Land Supply Situation

Table 1.   Employment land supply at April 2009 (Hectares)

Completions 2006-2009	Under Construction at April 2009	Land Availability		Planning Status			Total Land Available
		Readily Available	Not Readily Available	With Planning Consent	Allocation in Local Development Document	Other Commitment	
38.87	0.31	76.59	8.53	71.82	13.30	0.00	85.12

Source; Staffordshire Employment Land Survey 2009

1.1   As of April 2009, a total of 85.1 hectares of employment land was committed by planning permission, identified in a local development document, or under construction in the Stafford Borough Council area.

1.2   Of the total employment land supply in Stafford Borough, some 76.59 hectares (90% of the total stock) is classed as being readily available, with the remaining 8.53 hectares (10%) classed as not readily available. The majority of the land identified in the Borough for employment land purposes has the benefit of planning consent. In total, 71.82 hectares (84%) of employment land has planning consent with the remaining 13.30 hectares (16%) being identified in a local development document.

1.3   With the significant levels of development at Prime Point 14 in recent years, the amount of available employment land identified in Stafford Borough has fallen by 23% in just three years. Currently the portfolio of employment land in the Borough is characterised by one large site of 34 hectares at Meaford and five smaller sites of around 7 to 8 hectares in size and a large number of smaller sites below 2 hectares in size. There is currently no employment land sites of 2 to 7 hectares in size identified and only one site above about 8 hectares in size. The range of sites in terms of site size may be an issue that needs considering when looking at the future employment land provision in the Borough.

1.4   The majority of the employment land stock in Stafford Borough (78.4Ha) is classified as being suitable for a mixture of uses (B1/B2/B8 use). Just 3 hectares of land is currently identified solely for B1 use; 3 hectares for B2 use only; and less than 1 hectare of land solely for B8 use.

1.5   If recent development trends are continued, it is possible that a significant element of the land supply which is classed as a mixture of uses will be developed as B8 type distribution and warehousing use, as businesses are keen to capitalise on the strategic transportation links offered in the district. However, employment forecasts, which are examined in further detail later in this report, will be important towards informing the future types of employment land required in the district.
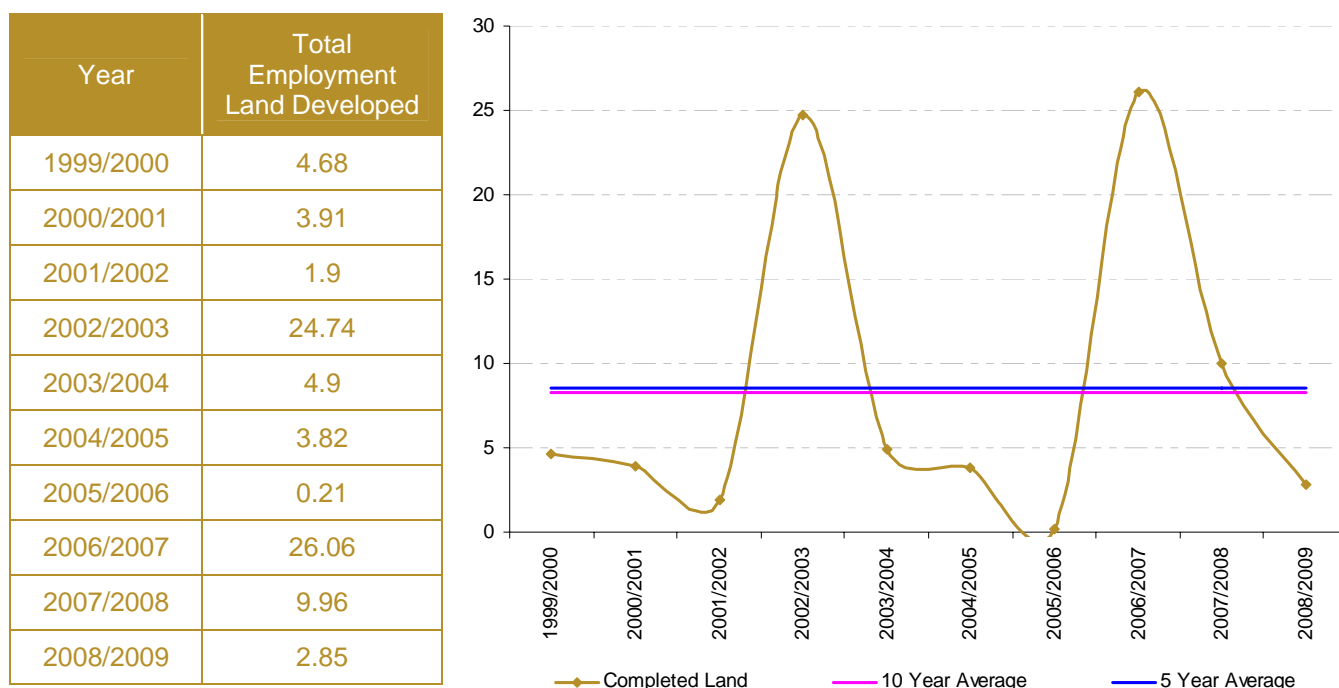
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2   Continuation of Past Development Trends Approach

Step 1 - Previous levels of Employment Land Development

2.1   Using data from the Staffordshire Employment Land Survey over the past 10 years identify the total amount of employment land that has been completed in Stafford Borough. This information will then form the basis of the Past Trends Approach.

Table 2. Employment Land Completions 1999/2000 to 2008/2009 (Hectares)

Year	Total Employment Land Developed
1999/2000	4.68
2000/2001	3.91
2001/2002	1.9
2002/2003	24.74
2003/2004	4.9
2004/2005	3.82
2005/2006	0.21
2006/2007	26.06
2007/2008	9.96
2008/2009	2.85

Source: Staffordshire Employment Land Survey 2009

Step 2 - Calculate the average levels of employment land completions

2.2   Having taken account of employment land completions for each of the past 10 years, mean average annual employment land completion rates are calculated for the periods of the past 10 years, and the past 5 years. These offer an average build rate, which will go on to form the overall basis for the calculation of future requirements.

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Table 3. Average Building Rates - past 5 year and past 10 year (Hectares)

Total Completions 2004/05 to 2008/09	Average Build Rate (5 years)	Total Completions 1999/2000 to 2008/09	Average Build Rate (10 years)
42.90	8.58	83.03	8.30

Source: Staffordshire Employment Land Survey 2009

Step 3 - Translating average employment land completions to future requirements

2.3   The average annual building rates for both the past 5 years, and the past 10 years are then translated into potential land requirements by multiplying the relevant average annual building rates by a factor of 20 – this provides a potential figure for the 20 year period between 2006-2026 based on build rates from the past 5 years and 10 years. The potential land requirements for the twenty year period between 2006 and 2026 are set out in table 4 below.

Table 4 – Potential land required - based on past 5 year and past 10 year averages (Hectares)

Average Build Rate (5 years)	Land Supply 2006-26 (based on 5 year build rate)	Average Build Rate (10 years)	Land Supply 2006-26 (based on 10 year build rate)
8.58	171.60	8.30	166.00

Source: Staffordshire Employment Land Survey 2009

Step 4 – Taking Completed Development into consideration

2.4   The land supply requirements identified in step 3 cover a twenty year period from 2006 to 2026. However there has already been 3 years worth of completions during the period 2006 to 2009 which need to be considered. The level of completions during 2006 to 2009 should be taken from the overall requirement identified in step 3. The potential land requirements for the remaining seventeen years of the period between 2006 and 2026 are set out in table 5 below.

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Table 5 – Potential land required post April 2009

	Estimated Land Supply Requirement 2006-2026	Completions 2006 – 2009	Estimated Residual Land Required 2009- 2026	Estimated Annual Average Rate of Completions (2009-2026)
Based on 5 year average build rate	171.60	38.87	132.73	7.81
Based on 10 year average build rate	166.00	38.87	127.13	7.48

Source: Staffordshire Employment Land Survey 2009

2.5   These potential land requirements are likely to be towards the upper end of estimates of need for future employment land in the district.

2.6   It is very possible that the requirements are potentially skewed upwards by the recent high levels of land taken in the B8 Distribution and Warehousing sector in Stafford (particularly around Prime Point 14), which tends to be a much more "land hungry" use than other use classes.

2.7   The continuation of past trends method of forecasting future land requirements is one of the less sophisticated approaches of identifying future employment land. It does, however, provide a useful, at a glance indication of how requirements might be shaped into the future, if the economy follows the patterns of development that have been characteristic of recent years. It was also the basis on which indicative land requirements at a local level were calculated in the Phase 2 Policy Options consultation of the review of the West Midlands Regional Spatial Strategy.

2.8   An issue for consideration when using the continuation of past trends approach, is that future economic conditions will not necessarily mirror those that have taken place in the recent past. Employment forecasts (which will be examined in further detail in this report) suggest that the growth in the distribution and warehousing (B8) sector is likely to decrease in growth from recent trends, and that industries requiring B1 type accommodation are likely to become much more important into the future.

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3 Labour Demands Approach using Employment Forecasts

Step 1 – Identify employment forecasts for employment change

3.1 Table 6 below highlights the forecasted levels of employment in total terms, and by broad industrial sector over the period between 2006 and 2026. The employment forecast data has been sourced from Cambridge Econometrics Local Economy Forecasting Model – a well respected source of employment forecasting data nationally, and is used widely for both the purposes of economic forecasting and as one factor for employment land estimation.

3.2 The base year of the employment forecast is 2008, so any data beyond this year is forecast data, and should be treated with some element of caution accordingly. Indeed a forecast is only an indicative estimate of how the economy may change into the future and as such, any land requirements generated as a result of economic forecasts should only be classed as estimates, and as an initial starting point for the further analysis of land for employment requirements.

3.3 Table 6 highlights the forecasted number of jobs in each of the main employment sectors for 5 year periods between 2006 and 2026.

3.4 Table 7 highlights the forecasted changes in employment between the 5 year periods, and 2006-2026 (the period over which land requirement estimations will be required). The employment change figures will form one part of the basis for the calculation of land required through the labour demand approach.

Table 6 – Employment Forecasts 2006-26 (absolute jobs)

Industry	2006	2011	2016	2021	2026	Total Change 2006-26	Percentage Change 2006-26
Agriculture etc	2,000	2,300	1,500	1,000	700	-1,300	-65%
Mining and quarrying	0	0	0	0	0	0	0%
Manufacturing	8,500	5,700	5,000	4,400	3,900	-4,600	-54%
Electricity gas and water	0	300	300	200	200	200	0%
Construction	2,800	2,700	3,100	3,300	3,300	500	18%
Distribution hotels and catering	14,100	13,100	13,100	12,900	12,900	-1,200	-9%
Transport and communications	3,100	2,600	2,200	1,800	1,400	-1,700	-55%
Financial and business services	7,800	8,000	8,400	9,000	9,500	1,700	22%
Government and other services	29,800	31,000	29,800	28,200	26,800	-3,000	-10%
Total	68,200	65,700	63,300	60,800	58,400	-9,800	-14%

Source: Cambridge Econometrics

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Table 7 – Employment Forecasts 2006-26 (change in absolute jobs)

Industry	2006-2011	2011-2016	2016-2021	2021-2026	Total Change 2006-26
Agriculture etc	300	-800	-500	-400	-1,300
Mining and quarrying	0	0	0	0	0
Manufacturing	-2,800	-700	-600	-500	-4,600
Electricity gas and water	300	0	-100	0	200
Construction	-100	400	200	0	500
Distribution hotels and catering	-1,000	0	-200	0	-1,200
Transport and communications	-500	-400	-400	-400	-1,700
Financial and business services	200	400	600	500	1,700
Government and other services	1,200	-1,200	-1,600	-1,400	-3,000
Total	-2,500	-2,400	-2,500	-2,400	-9,800

Source: Cambridge Econometrics

Step 2 – Identify employment densities and relevant plot ratios for translation to land requirements

3.5   In order to translate forecasted employment change into a potential floor space requirement, account is taken of the amount of floor space that the differing employment sectors will need.

3.6   Primarily a best fit approach was used to estimate which use class is the most appropriate to each of the economic forecasting sectors (the best fit to use classes will be used later in the process, as this study will only take account of the need for B class use employment land).

3.7   Table 8 below highlights the potential floor space requirements of the different sectors identified by the employment forecasts above. Floor space requirements vary substantially from the lowest levels (and highest job densities), in the hotels and catering sector, up to the highest levels (and lowest job densities) such as those traditionally found in the distribution sector. For example 100 new jobs in the manufacturing industry would be calculated by multiplying 100 x 30 (the floor space per manufacturing job). This would yield a floor space requirement of 3000 sq m.

3.8   In addition to floor space, a "plot ratio" factor is also required. The plot ratio factor provides a basis on which to translate floor space into an overall area of

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employment land. For example a plot ratio of 0.4 suggests that floor space for jobs will only account for around 40% of the total employment land needed for a certain plot. The plot ratio factor allows this to be factored up accordingly. Further details on the floor space density and plot ratios will be examined later in the report.

Table 8 – Employment density and plot ratio factors

Industry	Use Class (Best fit)	Floorspace Density (sq.m.)	Plot Ratio
Agriculture etc	N/A	N/A	N/A
Mining and quarrying	N/A	N/A	N/A
Manufacturing	B2	30	0.4
Electricity gas and water	B2	30	0.4
Construction	B2	30	0.4
Distribution hotels and catering	A1, A3, B8, C1, Sui Generis	20 / 65	0.4 / 0.6
Transport and communications	B1, Sui Generis	20	0.6
Financial and business services	A2, B1	20	0.6
Government and other services	A2, B1, D1, D2	20	0.6

Source: Densities – English Partnerships, Plot Ratios – Atkins Staffordshire Moorlands Employment Land Study

Notes: Densities have been extracted and interpreted from the English Partnerships publication – "Employment Densities – A Simple Guide". This publication identifies data generated for the average densities nationally.

Employment Densities calculated by the Research Business unit from surveys of local industrial estates and business parks developed by Staffordshire County Council suggest that local densities are lower than those reported nationally meaning that locally more land could be necessary.

Floorspace density is the amount of floorspace (sq.m.) required to accommodate a job. Plot Ratios is the factor of the additional land required to accommodate the floorspace.

Step 3 – Identify possible assumed levels of employment taken on B class land

3.9 Firstly a refinement of the employment forecasts in tables 6 and 7 is undertaken. This identifies those sectors that will require B class employment land being taken. The relevant sectors requiring B class employment land are highlighted in table 9 below.

3.10 For the purposes of this piece of work, a range of different scenarios have been taken into account in order to identify the employment land requirement using the labour demand modelling approach.

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3.11 The different scenarios take account of the different ways in which the employment forecast information can be interpreted. The preferred approach, which is worked through in this methodology is to use a scenario where:

- Negative employment change is excluded

- An assumption is made of the different proportions of the forecasted increase in employment that is likely to require B Class land (see table 9 below)

- An assumption is made for potential relocation for manufacturing employment. A proportion of 10% of the manufacturing employment in each of the 5 year periods of the employment forecasts has been suggested for manufacturing employment relocation. For example in 2006, 850 jobs, in 2011, 570 jobs and so on.

3.12 The assumptions on the proportion of forecasted employment likely to require B class land has been taken from survey work undertaken by the Research Unit – the proportions have been calculated based on occupation of industrial estates in Staffordshire, local knowledge based on occupiers of recently completed development on B class land and an approximation relating to the split between the various use classes in the projections.

Table 9 – Assumed levels of land to be taken on B Class land following changes to local economic base from employment projections

Industry	Use Class (Best fit)	Assumed level of employment which will be accommodated on B Class Land
Manufacturing	B2	10% [a]
Electricity gas and water	B2	100%
Construction	B2	10%
Distribution hotels and catering	B8, Sui Generis	30% [b]
Transport and communications	B1, Sui Generis	100%
Financial and business services	B1	70%
Government and other services	B1	10%

Notes: (a) All manufacturing employment will be located on B class land, however, as the projection indicates negative growth in this sector, a 10% figure has been included as an allowance for the relocation of existing manufacturing employment.

(b) Although only 30% of the total number of jobs in the Distribution, Hotel and Catering sector related solely to B8 & Sui Generis type uses, it is assumed that 100% of the B8 and Sui Generis uses in this sector will be located in B class land

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Step 4 – Convert labour demand from assumed forecasted employment change into a floor space requirement

3.13   The conversion of labour demand into potential employment floor space is a relatively straightforward process.

3.14   Firstly, the employment change figures identified in table 7 are multiplied by the relevant density factors as set out in table 8 – these yield the floor space figures as set out in table 10 below. Although manufacturing employment is expected to generate a negative change throughout the period of interest, the incorporation of 10% of the annual employment in manufacturing for relocations, as highlighted above explains the generation of land requirements for that sector.

3.15   For the purposes of this method, employment change which yields a negative change is discounted from the calculations.

Table 10 – Potential floor space requirements using employment density above and assumed proportions of employment taking B class land

Industry	2006-2011	2011-2016	2016-2021	2021-2026	Total Change 2006-26
Manufacturing	25,500	17,100	15,000	13,200	70,800
Electricity gas and water	9,000	0	Neg	0	9,000
Construction	Neg	1,200	600	0	1,800
Distribution hotels and catering	Neg	0	Neg	0	Neg
Transport and communications	Neg	Neg	Neg	Neg	Neg
Financial and business services	2,600	5,200	7,800	6,800	22,400
Government and other services	2,400	Neg	Neg	Neg	2,400
Total	39,500	23,500	23,400	20,000	106,400

Source; Cambridge Econometrics and Research Unit

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Step 5 – Use plot ratios to convert floor space requirement into employment land requirements

3.16 In order to translate forecasted floor space requirements into an overall employment land requirement "plot ratios" have been used and are specified alongside the relevant employment densities in table 8.

3.17 For example a plot ratio of 0.4 (as used when considering most B1 type development) suggests that floor space for jobs will only account for around 40% of the total employment land needed for a certain plot.

3.18 Table 11 applies the relevant B class plot ratio to floor space requirements set out in table 10 to calculate an overall land requirement. The land requirement in sq metres is divided by 10,000 to provide an overall requirement in hectares.

Table 11 – Potential land required (NET) excluding negative change

Industry	2006-2011	2011-2016	2016-2021	2021-2026	Total Change 2006-26
Manufacturing	6.38	4.28	3.75	3.30	17.70
Electricity gas and water	2.25	0.00	Neg	0.00	2.25
Construction	Neg	0.30	0.15	0.00	0.45
Distribution hotels and catering	Neg	0.00	Neg	0.00	0.00
Transport and communications	Neg	Neg	Neg	Neg	Neg
Financial and business services	0.43	0.87	1.30	1.13	3.73
Government and other services	0.40	Neg	Neg	Neg	0.40
Total	9.46	5.44	5.20	4.43	24.53

3.19 Using the above methodology and assumptions between 2006-26 a total of 24.5 Ha of B Class land will be required (The period 2006 to 2026 is the overall period of interest for the Stafford Borough Council Employment Land Study).

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Testing Against Other Scenarios

3.20 In addition to the preferred methodology outlined in steps 1 to 5 above, a range of alternative approaches have been used to identify what impact these would have on estimated land requirements.

3.21 To test the different ways in which land could be required, labour demand based employment land requirements have been recalculated using the following range of alternative scenarios:

- **Scenario (A)** Not taking into account the assumptions related to the potential levels of employment likely to be accommodated on new B Class land (therefore all forecasted employment change in identified sectors will be going to B class land – the proportion factors in table 9 would be set to 100%), excluding negative change, and excluding relocations for manufacturing.

Table 12 – Scenario A

Industry	2006-2011	2011-2016	2016-2021	2021-2026	Total Change 2006-26
Manufacturing	0.00	0.00	0.00	0.00	0.00
Electricity gas and water	2.25	0.00		0.00	2.25
Construction		3.00	1.50	0.00	4.50
Distribution hotels and catering		0.00		0.00	0.00
Transport and communications					
Financial and business services	0.67	1.33	2.00	1.74	5.75
Government and other services	4.00				4.00
Total	6.92	4.33	3.50	1.74	16.50

- **Scenario (B)** Not taking into account the assumptions related to the potential levels of employment likely to be accommodated on new B Class land (therefore all forecasted employment change in identified sectors will be going to B class land – the proportion factors in table 9 would be set to 100%), excluding negative change, including relocations for manufacturing.

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Table 13 – Scenario B

Industry	2006-2011	2011-2016	2016-2021	2021-2026	Total Change 2006-26
Manufacturing	6.38	4.28	3.75	3.30	17.70
Electricity gas and water	2.25	0.00		0.00	2.25
Construction		3.00	1.50	0.00	4.50
Distribution hotels and catering		0.00		0.00	0.00
Transport and communications					
Financial and business services	0.67	1.33	2.00	1.74	5.75
Government and other services	4.00				4.00
Total	13.29	8.61	7.25	5.04	34.20

- **Scenario (C)** Not taking into account the assumptions related to the potential levels of employment likely to be accommodated on new B Class land (therefore all forecasted employment change in identified sectors will be going to B class land), including negative change, and without relocations for manufacturing (this is the most unrealistic approach as the negative employment change in some sectors included under the approach, can yield negative land requirements).

Table 14 –Scenario C

Industry	2006-2011	2011-2016	2016-2021	2021-2026	Total Change 2006-26
Manufacturing	-21.00	-5.25	-4.48	-3.44	-34.17
Electricity gas and water	2.25	0.00	-0.75	0.00	1.50
Construction	-0.08	0.30	0.15	0.00	0.38
Distribution hotels and catering	-3.25	0.00	-0.65	0.00	-3.90
Transport and communications	-1.67	-1.33	-1.32	-1.36	-5.68
Financial and business services	0.43	0.87	1.30	1.13	3.74
Government and other services	0.40	-0.40	-0.53	-0.48	-1.01
Total	-22.91	-5.82	-6.28	-4.14	-39.15

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3.22 Scenarios A and B provide useful alternatives to the principal projection. However, Scenario C appears to be unrealistic as it generates such a large negative land requirement figure based principally on a significant projected decline in the number of manufacturing jobs in the Borough.

4 - Conclusions

4.1   The two different approaches of future employment land estimation in Stafford Borough have yielded very different results of the potential levels of employment land required over the next 20 years. The resultant land requirements from the two approaches should be treated as an indicative level of land, rather than a prescriptive level of land to be identified.

4.2   These conclusions should be read alongside the examination of further issues section of the summary report.

Past Trends Approach

4.3   The continuation of past development trends approach yields by some margin the greatest potential levels of employment land requirements between 2006–2026.

4.4   Using average development levels taken from the last 10 years, around 166 hectares of employment land would be required, while taking into account development levels from the past 5 years, around 172 hectares of employment land would be required.

4.5   These land requirements are likely to be skewed towards the upper end of the "expected" levels of land requirement in Stafford Borough over the next 20 year period, and would be the result of rapid growth levels in the area's economy.

4.6   Past trends development in Stafford Borough has been relatively buoyant over recent years (particularly in the B8, distribution and warehousing sector). Employment forecasts suggest that such buoyant levels of local development, particularly in the B8 sector (and the larger amounts of land that this requires) will lessen into the medium and longer term future – this may mean that a more accurate reflection of employment land requirements could fall somewhere below these figures.

4.7   The past trends approach should be seen as a suggestion of potential land requirements under some of the higher levels of employment growth, particularly where growth may be concentrated in the B8 distribution and warehousing sector

Labour Demand Approach

4.8   The labour demand approach uses forecasted employment change to identify potential future land requirements in the district.

4.9   The labour demand approach indicates a significant overall decline in total employment levels in the Borough between 2006 and 2026, which are mainly due to a significant decrease in employment in the Manufacturing and Government and Other Service sectors.

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4.10 Under the different scenarios and assumptions tested in the labour demand approach, the preferred approach yields an employment land requirement of 24.5 hectares in the period 2006 to 2026. An "upper end" approach which would see all B class employment provided on new B class land, as well as an element of relocation for manufacturing, suggests an employment land requirement of around 34 hectares.

4.11 Labour demand approaches are useful for identifying the land requirements of expected, trend based employment change.

4.12 The labour demand approach should be seen as a prediction of land requirements under expected economic growth conditions. It does not offer a prediction of the land requirements that may be driven through planning policy led growth. In addition, a step change to the nature of the local economy (for example the introduction of a major new firm intensifying local supply chains, or a major firm closing down) can have significant impacts on the local economy, and subsequently potential employment land levels.

5 - Summary

5.1   Over the period 2006 to 2026, new employment land requirements in Stafford Borough are likely to be at the very minimum around 16 hectares, and as a maximum, around 172 hectares.

5.2   It is very difficult to prescribe with any confidence a suggested amount of land for the employment development needs of the area. The lower end of the estimates do fall some way short of the development vision of Stafford Borough Council which is to develop on average around 8 hectares of employment land annually between 2006 and 2026.

5.3   The further issues section of the accompanying summary report will identify other factors which are not necessarily borne out by hard quantitative evidence but could pose to be significant contributory factors in an employment land study, and an employment land identification exercise.

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