

# North West Leicestershire

## Employment Land: Updated Demand Forecasts





## CONTENTS

1	INTRODUCTION.....	1
2	EMPLOYMENT FORECASTS .....	3
	Method and assumptions .....	3
	Employment by economic sector .....	3
	Employment by land use.....	5
3	FLOORSPACE AND LAND.....	15
	Alternative Scenarios .....	15
	Best estimates.....	16
4	POLICY IMPLICATIONS.....	19
	Net change.....	19
	Losses and churn.....	20
	Choice, competition and flexibility .....	20

## APPENDICES

APPENDIX 1 OXFORD ECONOMICS NOTE ON THE FORECASTS

APPENDIX 2 OXFORD ECONOMICS EMPLOYMENT FORECASTS

APPENDIX 3 DEFINITION OF INDUSTRIAL, WAREHOUSE AND OFFICE JOBS



# 1 INTRODUCTION

- 1.1 Roger Tym and Partners (RTP) were commissioned by North West Leicestershire District Council to forecast the demand for employment floorspace and land in the district over the plan period 2006-31. The forecast will help inform employment land provision targets in the Council's emerging Core Strategy. It provides a partial update of our 2005 North West Leicestershire Employment Land Study<sup>1</sup>, which considered both the demand and supply of employment land for an earlier plan period, 2004-21.
- 1.2 The starting point for this study is a forecast of workplace employment in the district, which we commissioned on behalf of the Council from Oxford Economics (OE)<sup>2</sup>. OE was founded in 1981 as a joint venture with Templeton College, Oxford University's business college and is a leading provider of economic analysis and forecasting, including forecasts for local areas within the UK. Appendix 1 below provides more information about OE's methods generally and their forecast for North West Leicestershire specifically.
- 1.3 Section 2 below shows the OE forecast, which provides employment by economic sector, translates this into employment by land use, and discusses the credibility and implications of the resulting job numbers. Section 3 translates the employment forecast into demand for floorspace and land. Finally Section 4 draws the implications for planning policy.
- 1.4 In considering employment change, this report deals with all jobs, regardless of the kind of space they occupy. But in relation to the demand for floorspace and land the report deals only with the traditional employment land uses, also known as the B-class uses because they cover classes B1, B2 and B8 of the Use Classes Order, comprising offices (including research and development<sup>3</sup>) (classes B1a and B1b<sup>3</sup>, industrial space (B1c and B2) and warehousing (B8). References to employment land and floorspace relate to these land uses only. The report does not consider the 'non-B' economic sectors, such as retail, education and health, which do provide employment but use other kinds of space.

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<sup>1</sup> Roger Tym and Partners and Innes England (2005), *North West London District Council Employment Land Study*, May.

<sup>2</sup> The employment figures in the 2005 employment land study were provided by another forecaster, Experian, who at that time was commissioned by the regional partners to produce employment forecasts across the East Midlands.

<sup>3</sup> Research and development occupies different kinds of space. Some R&D premises are indistinguishable from offices, other are identical to industrial units, and others are more specialist spaces such as labs. For convenience, in this study we merge R&D with offices. This makes virtually no difference in practice, because R&D is a very small sector: in North West Leicestershire, the sector as defined by the Standard Industrial Classification (SIC) provides around 90 jobs.



## 2 EMPLOYMENT FORECASTS

### Method and assumptions

- 2.1 OE’s forecast of employment in North West Leicestershire is based on the firm’s local economic forecasting model and its standard assumptions, which include its current view of the macroeconomic and demographic context. The forecast relates to all jobs located in the district (‘workplace jobs’), covering both employees and the self-employed, and all economic sectors, whether or not they occupy B-class space (‘employment space’). We refer to these figures interchangeably as ‘employment’ or ‘jobs’.
- 2.2 However one of the assumptions input into the model has been customised to reflect the district’s planning policy. To help ensure that the Core Strategy targets for housing and employment land are mutually consistent, the forecast’s assumptions about the district’s future resident population are based on the housing targets proposed in the Council’s emerging Core Strategy. These housing and population assumptions, which are taken from the preferred scenario in the Council’s housing requirements study<sup>4</sup>, are shown in Table 2.1 below.
- 2.3 There is a causal link between future resident population and future workplace employment, because the model assumes that population growth leads to employment growth in those economic sectors that serve local residents, such as retail, education and health. But few local service jobs are based in B-class space. Therefore the link between resident population and B-class employment, which in turn drives employment land demand, is weak.

**Table 2.1: Population and housing projections for North West Leicestershire**

	<b>Change 2006-31</b>
Population	17,566
Dwelling units	9,709

Source: GL Hearn and JG Consulting

### Employment by economic sector

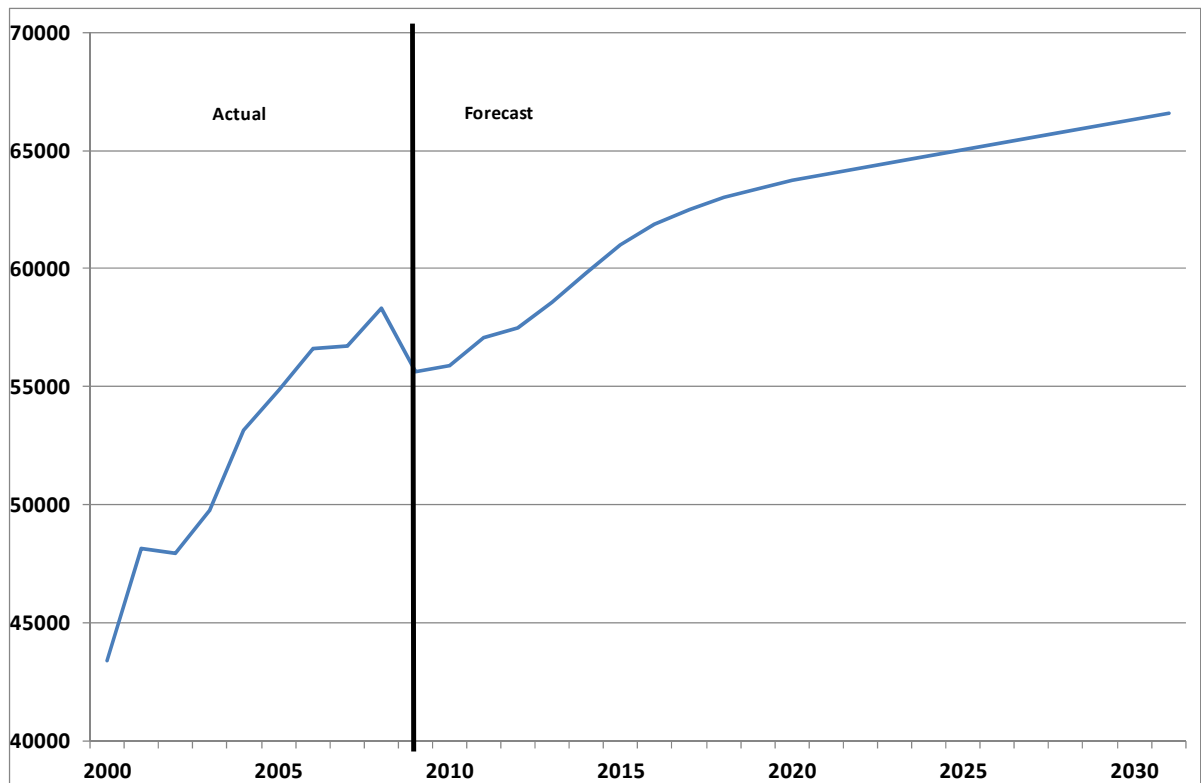
- 2.4 OE’s figures on jobs in North West Leicestershire, covering both estimates of past employment and forecasts of future employment, are summarised in Figure 2.1 below. (Appendix 2 shows the detailed numbers, which are also provided separately as an Excel workbook.) In the first decade of this century, North West Leicestershire enjoyed rapid job growth as total jobs in the district increased by 29% between 2000 and 2010, despite the recession-induced fall between 2008 and 2010. Unfortunately we cannot compare this figure with the national norm, because, due to a change in the Standard Industrial Classification, there are no consistent time series on local employment change either side of 2008. But we do know from official statistics (the Annual Business Inquiry (ABI)) that

<sup>4</sup> GL Hearn and JG Consulting (2011), *Leicester & Leicestershire Housing Requirements Project*, September

over a similar period, 1998-2008, employee jobs increased by 36% in North West Leicestershire against 10% in Great Britain and 8% in the East Midlands.

- 2.5 So both the official statistics and OE's own figures suggest that the district in recent history has seen much greater employment growth than the nation and the region. It is not surprising that these two sources agree, because OE's historical figures are based on the official statistics, albeit OE makes various adjustments to these statistics.
- 2.6 OE forecast a continuation of this relatively rapid job growth, albeit at a slower rate than this recent experience, with total employment increasing by 19% between 2010 and 2031.
- 2.7 The district's history of rapid growth is the reason why similarly rapid growth is forecast for the future. OE, like other forecasters, in their local employment forecasts use a shift-share method, which broadly assumes that each sector's growth relative to the national norm is similar in the future to what it was in the past. So, because, North West Leicestershire in recent years saw much faster employment growth than Great Britain, OE predicts it will continue to grow faster than the country as a whole – though this 'local factor' will diminish over time.
- 2.8 As shown in Figure 2.2 below, business services is forecast to increase its employment by far more than any other sector, with expected growth of 9,000 (121%) in the district between 2006 and 2031. Business services is a large sector which accounts for the bulk of office-based economic activity outside the finance and government sectors. It covers a wide variety of services including computer-related, legal, accountancy, engineering, architecture, town planning, advertising, marketing and many others.

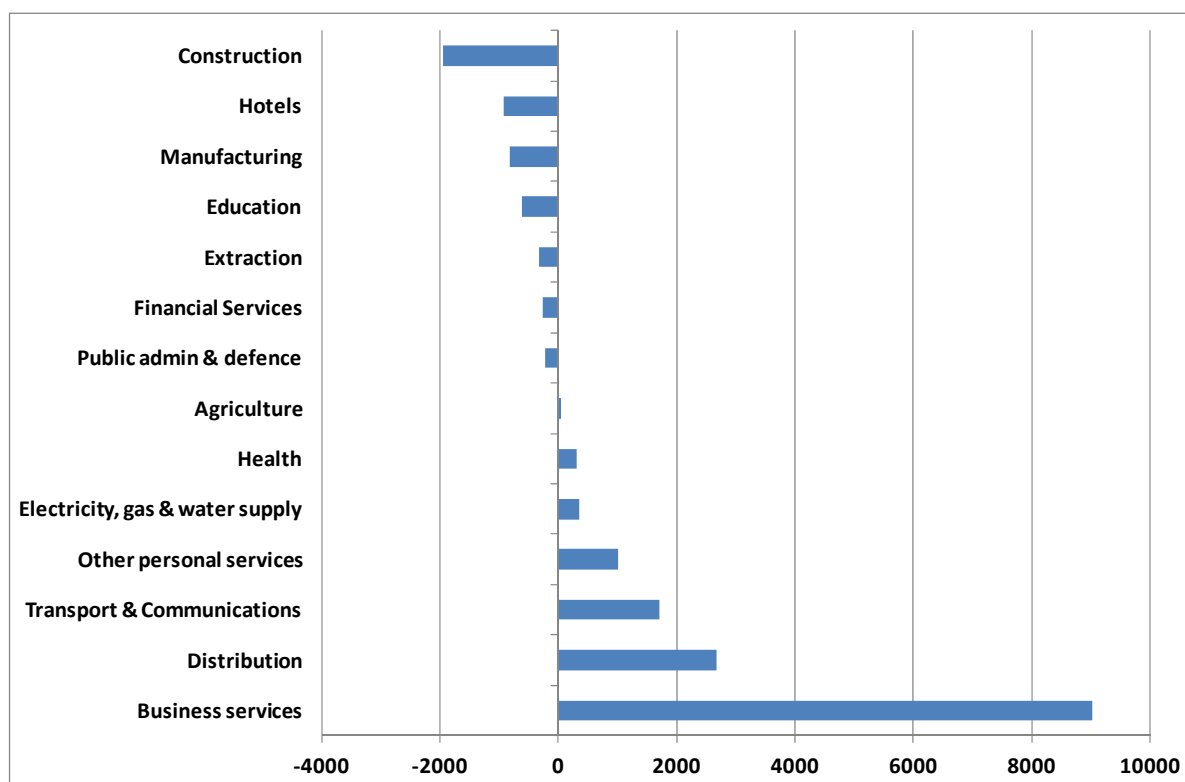
**Figure 2.1: Total workplace jobs, North West Leicestershire 2000-31**



Source: Oxford Economics

- 2.9 At national level, business services for many years has been one of the fastest-growing sectors. In North West Leicestershire, in recent years statistics indicate that the sector has grown even faster than in the country as a whole. It is this history of rapid growth that explains the similarly rapid growth forecast for future years. This forecast growth has major implications for office requirements; we look at it more closely in the next section (paragraph 2.35 onwards).
- 2.10 Other than business services, sectors expected to enjoy positive job growth include distribution (wholesaling and retailing) and transport and communications. At the other end of the spectrum, construction is forecast to experience the largest decline in jobs – a fall of around 2,000 between 2006 and 2031. Other sectors expected to see declining employment include manufacturing, hotels and restaurants and education.

**Figure 2.2: Forecast change in jobs by economic sector, North West Leicestershire, 2006-31**



Source: Oxford Economics

- 2.11 As shown in Section 3 below, this forecast strong growth in business services jobs has significant implications for the forecast growth of office employment and so for the demand for office space. The job growth expected in distribution and transport and communications has positive implications for the demand for warehousing space.

## Employment by land use

### Method

- 2.12 To translate forecast jobs into demand for floorspace and land, we use the same method as in our 2005 report. The first stage is to convert the job numbers by sector to job numbers by

land use (type of space) - office, industry, warehousing and non-B space jobs. We do this using the RTP definitions of offices, industry, and warehousing jobs (Appendix 2).

- 2.13 Table 2.2 below shows the 26 sectors that OE provides forecasts for and the land use or land uses associated with that sector in line with our land use definitions shown in Appendix 2.
- 2.14 Table 3.1 indicates that some of the sectors forecast by OE occupy space in more than one land use. For example, construction uses a mix of industrial and non B space. Specifically on our land use definition, the building installation and building completion sub-sectors within construction take up industrial space and it is the other sub-sectors which take up Non B space.
- 2.15 In order to calculate future job numbers in these ‘sub-sectors’, which are not identified separately in the OE forecast, we need to make assumptions about the future share of each sub sector’s employment in the larger forecast sector of which it forms part. There are two approaches to doing this:
- In the ‘fixed shares’ method, the shares are kept constant at their 2006 base year levels. Thus, official statistics from the Annual Business Inquiry (ABI) show that, in 2006, the sub-sectors assumed to use industrial space – which are building installation and building completion – accounted for 56.4% of all construction jobs; we assume that Industry jobs continue to account for 56.4% of construction jobs throughout the forecast period to 2031.
  - In the ‘floating shares’ method, the shares are assumed to change over time, continuing earlier trends. For some sectors a land use appears to be increasing its share of a particular sector’s jobs. For example, the ABI indicates that within the distribution sector the sub-sectors assumed to occupy warehousing increased their share of the distribution sector’s jobs from 34.0% to 42.6% between 1998 and 2008. For sectors such as this we continue this past trend up to 2031, but at half its past rate. For other sectors the share of its jobs accounted for by a land use shows no clear trend over time. For example, the share of office sub-sectors in the business services sector declined from 76.1% in 1998 to 53.2% in 2003 but subsequently bounced back to 63.7% in 2008. Hence for sectors such as these we assumed that the 2031 shares were an average of the shares seen over the period 1998-2008<sup>5</sup>.
- 2.16 The two methods are not mutually exclusive; different methods may be used in the same demand forecast for different types of space. In our experience the floating shares method is often preferable, because it may pick up structural trends, in particular deindustrialisation or ‘tertiarisation’, whereby the economy is shifting from physical production to service activities.

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<sup>5</sup> In one sector, other services, the share of office sub-sectors had fallen to such a low percentage by 2008 (2.6%) that we assumed that there was no scope for this percentage to fall further and so assumed that the 2031 office share of other services jobs would be 2.6%.

**Table 2.2: Sectors and land uses**

Sectors	Land uses
Agriculture	Non B
Extraction	Non B
food, drinks & tobacco	Industry
Manufacture of textiles	Industry
Manufacture of wood products	Industry
Manufacture of pulp & paper; publishing & printing	Mix of industry and offices
Manufacture of coke, oil refining & nuclear fuel	Industry
Manufacture of chemicals & man-made fibres	Industry
Manufacture of rubber & plastic products	Industry
Manufacture of other non-metallic mineral products	Industry
Manufacture of metals	Industry
Manufacture of machinery & equipment	Industry
Manufacture of electrical & optical equipment	Industry
Manufacture of transport equipment	Industry
Other manufacturing	Industry
Electricity, Gas & Water Supply	Non B
Construction	Mix of industry and non B
Distribution	Mix of industry, warehousing and non B <sup>6</sup>
Hotels & Restaurants	Non B
Transport & Communications	Mix of warehousing and non B
Financial Services	Office
Business Services	Mix of office, warehousing and non B
Public Admin & Defence	Mix of office, and non B
Education	Non B
Health	Non B
Other Personal Services	Mix of office, industry and non B

Source: Roger Tym and Partners

- 2.17 For those economic sectors which use mixed types of space, Table 2.3 below shows the proportions of employment which are assigned to different B-class uses. For example, we estimate that in 2006 7.0% of jobs in the pulp, paper, publishing & printing sector were in offices.

<sup>6</sup> As the Distribution sector covers retail as well as wholesale distribution, most of the sector's non-B employment is probably in retail premises.

**Table 2.3: Land use sectoral shares**

Sector	Land use	Share 2006	Fixed shares 2031	Floating shares 2031
Manufacture of pulp & paper; publishing & printing	Office	7.0%	7.0%	3.3%
Manufacture of pulp & paper; publishing & printing	Industry	93.0%	93.0%	96.7%
Construction	Industry	56.4%	56.4%	32.0%
Distribution	Industry	5.4%	5.4%	8.4%
Distribution	Warehousing	38.0%	38.0%	51.3%
Transport & Communications	Warehousing	62.3%	62.3%	77.1%
Business services	Office	65.5%	65.5%	62.0%
Business services	Warehousing	0.5%	0.5%	0.3%
Public admin & defence	Office	74.2%	74.2%	76.0%
Other services	Office	8.0%	8.0%	2.6%
Other services	Industry	6.2%	6.2%	8.5%

Source: Roger Tym and Partners based on ABI data

### Results overview

2.18 The tables below show the forecasts of jobs by land use. Table 2.4 shows the results using the fixed shares method and Table 2.5 the floating shares method.

**Table 2.4: Forecast jobs by land use, North West Leicestershire, fixed shares scenario**

	2006	2031	Change 2006-31
Industry	13,773	12,295	-1,478
Warehouse	9,253	11,668	2,415
Office	6,644	12,580	5,936
Non-B	26,966	30,056	3,090
Total	56,637	66,599	9,963

Source: Oxford Economics, Roger Tym and Partners

**Table 2.5: Forecast jobs by land use, North West Leicestershire, floating shares scenario**

	2006	2031	Change 2006-31
Industry	13,773	11,499	-2,275
Warehouse	9,253	14,921	5,668
Office	6,644	11,848	5,204
Non-B	26,966	28,332	1,366
Total	56,637	66,599	9,963

Source: Oxford Economics, Roger Tym and Partners

- 2.19 Table 2.6 compares these forecasts with the ‘baseline scenario’ in the 2005 employment land study (that earlier study also included a ‘high-growth scenario, which included additional growth at the East Midlands airport and with hindsight seems irrelevant).
- 2.20 We would not necessarily expect the 2011 forecasts to be similar to the 2005 ones, given that they cover a different periods and have different authors, and furthermore the two studies are separated by a major economic downturn. Nevertheless, the comparison places the latest forecasts in perspective.

**Table 2.6: Employment change per annum, North West Leicestershire, three scenarios compared**

Jobs p.a.	2005 study 2004-2021 baseline	2011 study 2006-2031 fixed shares	2011 study 2006-31 floating shares
Industry	-7	-70	-108
Warehousing	110	115	270
Office	43	283	248

Source: Roger Tym and Partners

### **Industrial space**

- 2.21 For industry, the two 2011 scenarios show losses of some 1,500 and 2,300 jobs (11% and 17%) respectively. Most of the economic sectors using industrial space are forecast to lose jobs. More jobs are lost in the floating shares scenario than the fixed shares one, largely due to the construction sector, in which the share of sectors occupying industrial space falls from 56% in 2006 to 32% in 2031. Both 2011 scenarios show greater jobs loss than the 2005 forecast, in which industrial employment was almost unchanged. One possible reason for this deterioration may be that the 2011 OE forecast, being post-recession, takes a more pessimistic view of the future of industry generally.
- 2.22 Looking ahead, in our judgment the 2011 forecasts, showing some loss of industrial jobs in the future, are broadly credible as a measure of the future demand for space. We consider that the fixed-shares version is likely to be the more robust and a better basis for planning policy. This is because the construction sector is especially volatile and may be poorly captured by official statistics; therefore it seems risky to rely on the floating scenario, in which change is largely driven by that sector. To choose this floating scenario would risk under-supplying the demand for industrial space, which could potentially force out or price out industrial activity from the district.

### **Warehousing**

#### *Total demand*

- 2.23 For warehousing, in the 2011 scenario the results of the two methods are very different – some 2,400 net new jobs in the fixed shares method and 5,700 net new jobs in the floating shares method.

- 2.24 The reason for this difference is that, within the distribution and transport and communications sectors, the share of those sub-sectors that occupy warehousing was on a rising trend in 1998-2008. The floating shares scenario carries this trend forwards into the future. Warehousing is forecast to increase its share of distribution and transport and communications jobs from 38% and 62% respectively in 2006 to 51% and 77% in 2031.
- 2.25 Comparison of the 2011 forecasts with the 2005 version is not straightforward. In the 2011 forecast, the fixed shares scenario shows similar growth to the 2005 version, but the floating shares scenario shows considerably more growth than the 2005 version.
- 2.26 For the warehouse-using sectors, as for other sectors, due to the shift-share forecasting method the forecast future change reflects past experience. One indication of this past experience is the growth of warehouse floorspace in North West Leicestershire, which increased from 438,000 sq m in 1998 to 821,000 sq m in 2008 – a rise of 383,000 sq m (47.4%), much greater than for other B-class floorspace.
- 2.27 Drawing on earlier studies and our professional experience, we consider that much of the demand for warehouse space in the area is footloose, generated by occupiers who may be happy to locate almost anywhere in or around the ‘Golden Triangle’ formed by the M1, M6 and M42. Such footloose demand is not tied to an individual local authority area: within a broad area of search its location will be largely determined by land supply, as developers and occupiers go to the places where sites are available. As noted in the 2005 employment land study, North West Leicestershire since the 1990s and earlier has offered a generous supply of warehousing sites. This has attracted occupiers providing many jobs, and therefore the forecasting model, using the shift-share method, predicts that this trend will continue in the future.
- 2.28 Because so much of the demand for warehouse space is footloose across the region or sub-region, it makes little sense to forecast demand in a single district such as North West Leicestershire in isolation. But since we do have to predict demand, in our view the floating-shares forecast, showing an additional 5,700 net new jobs over the 25-year plan period, in our view is the best available measure of future demand – the amount of development that would take place if the planning authority provided an unrestricted supply of suitable warehousing sites.
- 2.29 If it chooses to meet the forecast demand in full, the Council would be continuing its past role as a strategic warehousing location, accommodating regional or sub-regional footloose demand in the future as it has in the past.
- 2.30 But the forecast could prove to be an under-estimate of future demand, because North Leicestershire is a small part of a much larger market in which land supply for strategic warehousing is generally rationed.

#### *The proposed Strategic Rail Freight Interchange*

- 2.31 We have been asked whether the proposed Strategic Rail Freight Interchange near the East Midlands Airport (J24 of the M1) should be considered as additional to our demand forecast, because it will draw on regional or national footloose demand.

- 2.32 Bearing in mind the discussion above, this question does not have a straightforward answer. As discussed, the forecast already incorporates a strategic role for North West Leicestershire, whereby it accommodates a share of this strategically footloose demand. The Council may choose to step up this strategic role, by making provision over and above the forecast – including at the proposed rail freight interchange. To see how far this provision would meet a real additional demand, as opposed to displacing demand from other distribution parks in the district, would need a study of the current market. It is not a question that can be answered by the long-term forecasting in this report.

## Offices

### The forecast

- 2.33 For offices, the two 2011 scenarios produce broadly similar results – dramatic increases of around 5,900 and 5,200 jobs respectively, which nearly double the number of office jobs in the district over the 24-year plan period. The floating shares scenario shows fewer jobs than the fixed shares one, because in the floating shares version those business service activities whose employees are based wholly or partly in spaces other than offices – such as industrial cleaning and employment agencies – grow as a share of the business services total. We think that the floating shares scenario is probably closer to reality, because these changing shares are a continuing structural trend.
- 2.34 In both the 2011 scenarios the growth in office employment far exceeds the 2005 forecast, by a factor of five to seven.
- 2.35 This prediction of very high growth seems puzzling. We look at it more closely below, first by examining the forecast in detail and then by analysing the historical experience which informs it.
- 2.36 In the 2011 employment forecasts the business services sector accounts for the great majority of office jobs, rising from 75% of office jobs in 2006 to 90% in 2031. Hence the large rise in office jobs forecast between 2006 and 2031 is driven by OE's forecasts for business services. The district's business service jobs are forecast to increase by 3.2% per annum between 2010 and 2031, and the sector's share of the district's total employment is forecast to rise to 25% in 2031, compared to 10% in 2000 and 19% in 2010 (Table 2.7).

**Table 2.7: Business services jobs growth, 2006-31**

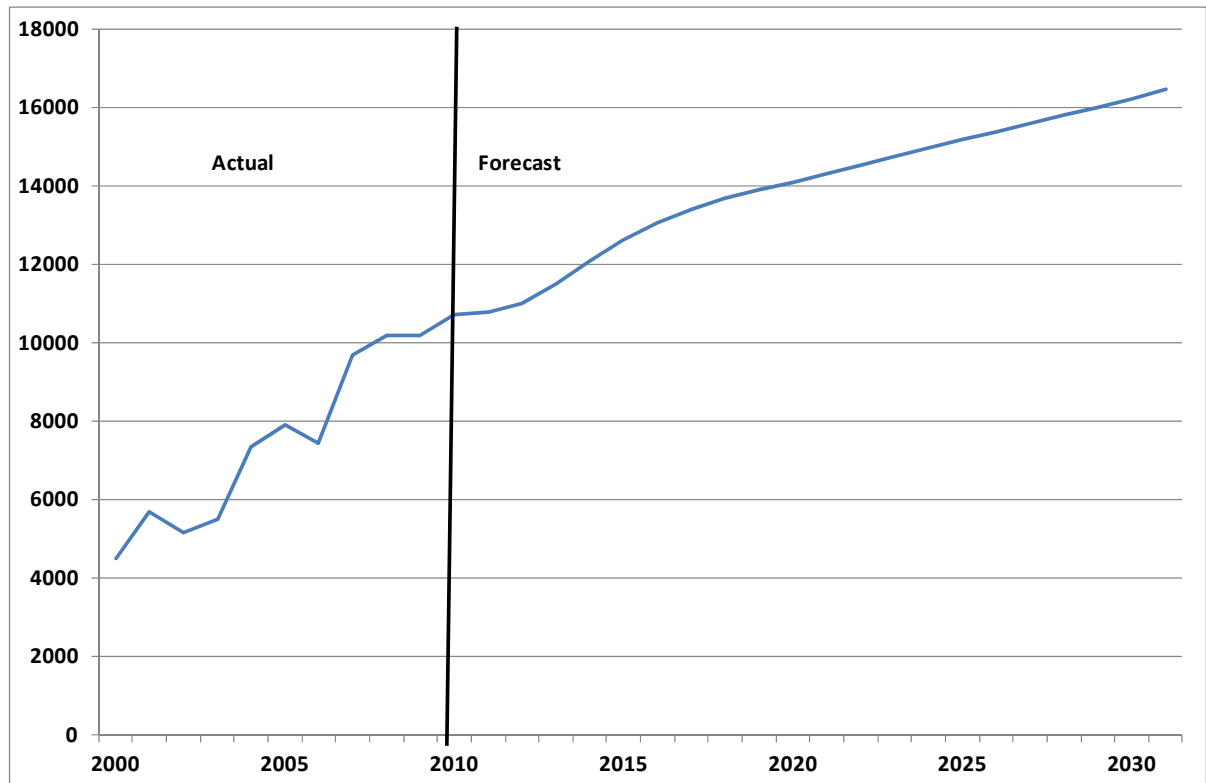
	Total %	% per annum
NW Leicestershire	121.2	3.2
East Midlands	57.8	1.8
UK	44.4	1.5

Source: Oxford Economics

### Recent history

- 2.37 This forecast growth carries forward the historical growth trend, though in more muted form (Figure 2.3). Between 2000 and 2010, OE data show very rapid job growth in business services in North West Leicestershire, at 9.1% p.a.

**Figure 2.3: Business services jobs, North West Leicestershire, 2006-31**



Source: Oxford Economics

- 2.38 The growth in business services jobs in North West Leicestershire was much greater than in the East Midlands and the UK (Table 2.8).

**Table 2.8: Business services jobs growth, 2006-2010**

	Total %	% per annum
NW Leicestershire	43.8	9.5
East Midlands	12.2	2.9
UK	2.8	0.7

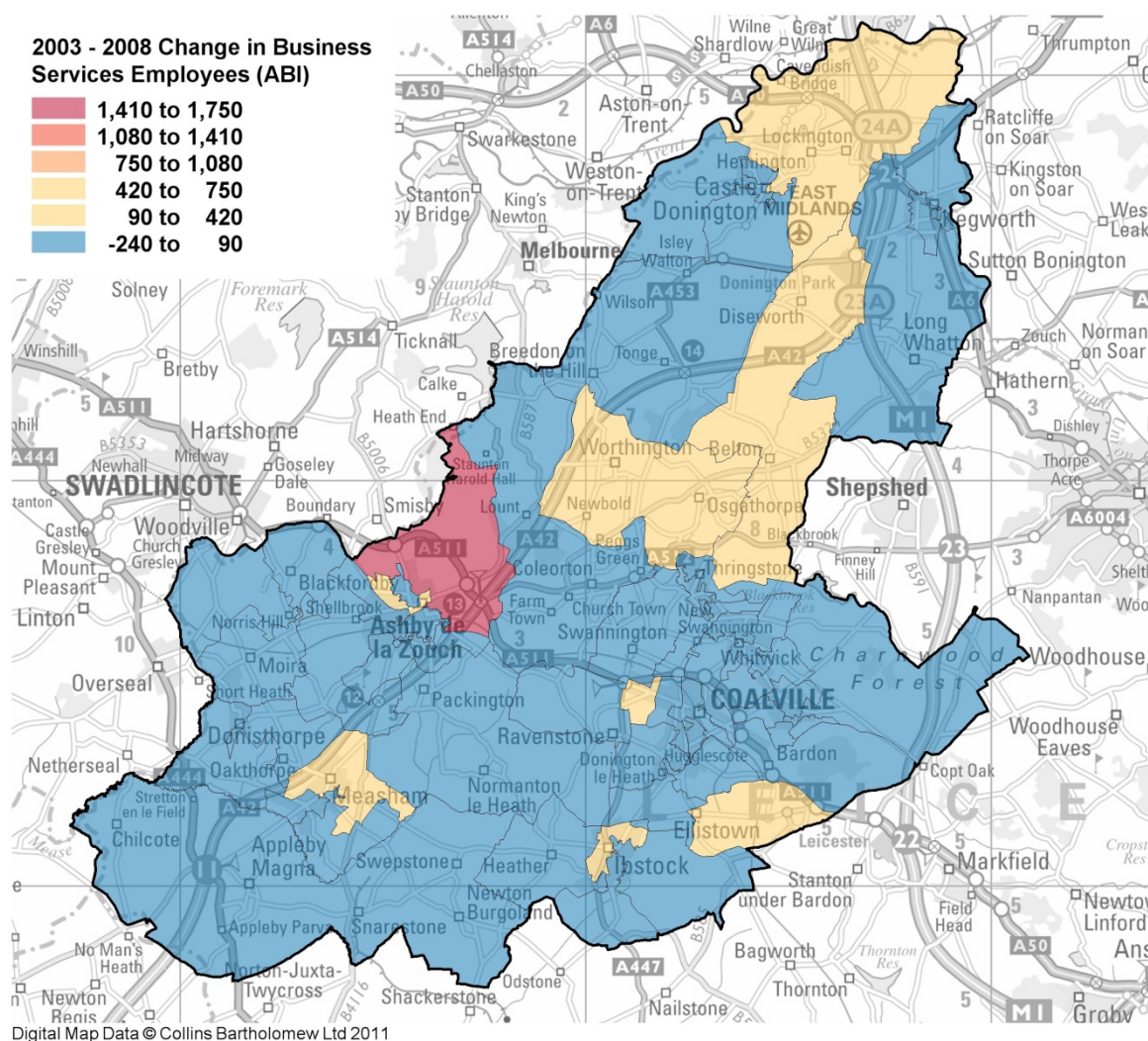
Source: Oxford Economics

- 2.39 This rapid growth is documented by the official statistics (ABI) – which cover just employee jobs rather than all workplace jobs and a slightly different period, 1998-2008. Over this 10-year period, the ABI indicates that employee jobs in business services in North West Leicestershire more than doubled, increasing by 9.5% per annum. Over the same period, the sector’s employment in Great Britain increased by just 3.1% p.a. In 1998 just 9% of the district’s total jobs were in business services, against 14% of the jobs in Great Britain. By 2008 17% of the district’s total jobs were in business services, virtually the same as in Great Britain, where the proportion was 18%.
- 2.40 For offices, like for other sectors but more so, this history of rapid growth is the reason why similarly rapid growth is forecast for the future. Based on the shift-share forecasting method described earlier, because North West Leicestershire historically has seen much faster

growth in business services than Great Britain, OE predicts that the sector will continue to grow faster in the district than in the country as a whole – though this ‘local factor’ will diminish over time.

- 2.41 To try and understand the exceptional recorded growth in business services jobs between 2003 and 2008, in Figure 2.4 below we map this growth. The map uses the ABI at the lowest level of geography available, lower level super output areas. This is the longest time period for which data is available at this geographic level. The map shows that growth was concentrated in an area to the north of Ashby de la Zouch.

**Figure 2.4: Location of growth in business services jobs, NW Leicestershire, 2003-08**



Source: Annual Business Inquiry

- 2.42 We cannot identify any particular business or development in the area that accounts for this job creation. Therefore it is conceivable the exceptional growth in business services in the district recorded between 2003 and 2008 is an error in the official statistics, which is carried forward into OE’s own historical figures and then into OE’s forecasts. If this were the case, the forecast would be an overstatement of the future demand for offices in the district.

2.43 On the other hand, in the business services sector, like in the warehouse-based sectors, is likely that North West Leicestershire in the past has accommodated substantial regional or sub-regional demand. The district may have been attractive to footloose occupiers because it has offered greenfield business park sites readily accessible to the regional centres of Leicester, Nottingham and Derby. If that is so, much or all of the recorded growth in business services in North West Leicestershire may be a true reflection of reality, as opposed to an error in the statistics.

*Future demand*

2.44 The forecast says that this growth in office jobs recorded over the recent past will continue to be forthcoming in the future, though not on the same scale – perhaps partly due to the worse macroeconomic climate. Whether this is correct will depend partly on whether the historical record is correct and partly on what happens in neighbouring districts - which is why, for office sectors just like for warehousing sectors, it is difficult to forecast demand for one district in isolation.

2.45 However, given that we have no way of checking the official statistics, and there are currently no regional or sub-regional arrangements, we have to forecast demand for North West Leicestershire as best we can. In the circumstances, we would suggest that the floating-share forecast of 5,200 net new office jobs over the plan period is the best available measure of future demand.

## 3 FLOORSPACE AND LAND

### Alternative Scenarios

3.1 To translate the employment forecasts in the last section into demand for floorspace, we use the same density figures as in the 2005 employment land study, which were also used in the 2008 study by PACEC<sup>7</sup>:

- Offices 18 sq m per worker
- Industry 31 sq m per worker
- Warehousing 88 sq m per worker

3.2 Tables 3.1 below translates both the fixed and floating share job scenarios into demand for employment floorspace.

**Table 3.1: Forecast demand for employment floorspace, 2006-31, NWest Leicestershire, sq m**

	Fixed shares	Floating shares
Industry	-45,833	-70,520
Warehousing	212,541	498,764
Office	106,850	93,671

Source: Oxford Economics, Roger Tym and Partners

- 3.3 In the 2005 employment land study, we noted that floorspace per worker in offices might be falling over time, in which case our forecasts would over-estimate the demand for space. But we concluded that there was not enough evidence to justify including an upward trend in our calculations.
- 3.4 Since that study, more evidence has come to light to suggest that floorspace per worker in offices has indeed been falling. A 2010 study by Roger Tym & Partners<sup>8</sup> reviews the available evidence from a range of sources and adds original evidence. The study suggests that office floorspace per worker by 2010 was a national average of 16 sq m – which did not seem to vary significantly between regions.
- 3.5 If this is correct and there is no further change in office densities, then the office demand forecasts at table 3.1 shrink slightly to 94,978 sq m in the fixed share scenario and 83,263 sq m in the floating-share scenario. In our view, these figures are more robust than those based on 18 sq m per worker.
- 3.6 We then convert the floorspace figures to land requirements using a plot ratio across all employment uses of 40% (4,000 sq m of floorspace per hectare of site area). Again this is

<sup>7</sup> PACEC (2008), *Leicester and Leicestershire HMA Employment Land Study*, November

<sup>8</sup> Roger Tym & Partners for Yorkshire Forward (2010), *Planning for Employment Land: Translating Jobs into Land*, April

the same plot ratio as in our 2005 study and the 2008 PACEC study. But it can be misleading, because plot ratios are highly variable, especially for offices. A plot ratio of 0.4 is appropriate for an out-of-town business park with low-rise buildings, generous surface car parking and landscaped areas. But for town centre offices, which are typically multi-storey and with little or no external space, plot ratios will be much higher.

- 3.7 Because plot ratios do vary widely, we would advise that planning policy targets be based on square metres of floorspace rather than hectares of land, especially for offices.
- 3.8 With these caveats in mind, Table 3.2 shows the forecast demand for employment land.

**Table 3.2: Forecast employment land demand 2006-31, North West Leicestershire, ha**

	Fixed shares	Floating shares
Industry	-11	-18
Warehousing	53	125
Offices @18 sq m per worker	27	23
Offices @16 sq m per worker	24	21

Source: Oxford Economics, Roger Tym and Partners

### Best estimates

- 3.9 In Section 2 above, we concluded that the best estimates of future demand would be those based on the fixed share employment scenario for industrial space, and on the floating share scenario for warehouse and office space. Therefore **our best estimates of the future demand for employment floorspace over the plan period 2006-31, measured in terms of floorspace capacity, are as follows:**

<b>Industrial</b>	<b>- 45,833 sq m</b>
<b>Warehousing</b>	<b>498,764 sq m</b>
<b>Industrial and warehousing</b>	<b>452,931 sq m</b>
<b>Offices</b>	<b>83,263 sq m</b>

- 3.10 The warehousing figure seems surprisingly large compared to the other land uses, but it is not large compared to past experience. Over the plan period it averages some 18,000 sq m of net additional floorspace per year, much less than the 38,000 sq m per year that the district gained in the 10 years to 2008.

- 3.11 Subject to paragraphs 3.6 and 3.7 above, **at a plot ratio of 40% this floorspace translates into site areas as follows:**

<b>Industrial</b>	<b>- 11 ha</b>
<b>Warehousing</b>	<b>125 ha</b>
<b>Industrial and warehousing</b>	<b>113 ha</b>
<b>Offices (out of town)</b>	<b>21 ha</b>

- 3.12 When these figures or related figures are included in land-use plans, they should of course be adjusted according the start year of the plan period. For example, if the Core Strategy's

base year were 2011, the provision already made between 2006-2011 should be deduced from the above figures, to produce an estimate of demand in 2011-31.

- 3.13 Given the uncertainties discussed earlier, **all the above figures are indicative only**. We show combined totals for industry and warehousing because to some extent sites for these uses are interchangeable.
- 3.14 In the next section we discuss how these forecasts might be used to inform planning policy.



## 4 POLICY IMPLICATIONS

### Net change

- 4.1 As part of the Core Strategy or Local Plan, the Council will need to set long-term targets for the amount of net new employment land it aims to provide.
- 4.2 Logically, the first step in setting such targets should be to forecast market demand. But it is difficult to forecast demand for an individual district in isolation. Forecasts for areas as small as districts are unreliable, partly because the data they use are not robust, and also because much of the demand is footloose, so that what happens in any one place is affected by what happens in neighbouring areas.
- 4.3 In an ideal world, therefore we would first forecast demand for the wider sub-region, and then consider how growth and development should be distributed across districts, as the 2008 PACEC study attempted to do. But at present strategic planning across local authority boundaries is suspended, as Regional Strategies are about to be abolished and the proposed 'duty to cooperate' is not yet established. Therefore we suggest that the Council use the figures at paragraphs 3.9 and 3.11 above as the best available estimate of future demand. Given that the forecasts period starts in 2006, in considering how much land is still to be allocated it will need to take account of net changes in the stock which have occurred since that start date.
- 4.4 While the demand forecasts should provide a starting point for land provision targets, the targets need not necessarily equal the forecasts. Planning targets will depend on the district's supply capacity and the Council's priorities, as well as the expected demand.
- 4.5 Thus, if the Council wishes to maximise employment growth, either in total or in particular sectors, it may decide to provide land over and above the forecast demand, so that if demand is higher than expected it does not miss any opportunities. Conversely, the Council may decide to undershoot the forecast demand, perhaps in recognition of environmental and infrastructure constraints. However, emerging national policy in the draft National Planning Policy Framework (NPPF) discourages such under-provision. The draft NPPF indicates that planning authorities should aim to meet demand ('objectively assessed need') for land, and if they cannot do so within their own areas they should work with neighbouring authorities to secure cross-boundary provision.
- 4.6 At present demand prospects are exceptionally uncertain, due to a combination of factors which include the hiatus in strategic planning and the macroeconomic situation. Therefore we would suggest that any employment land targets proposed in the Core Strategy be subject to review within 3-5 years.

## Losses and churn<sup>9</sup>

- 4.7 In order to turn net land provision targets into employment land allocations, the Core Strategy needs to translate these net targets into a gross requirement, or gross gain – an estimate of the new land that should be identified for employment, regardless of any existing land which will be lost to employment. To arrive at this gross requirement, we need to add to the net target already calculated a further quantity of land that equals the expected future loss and will replace that loss. If this adjustment is not made and significant amounts of existing employment land are lost in future, the net land supply will fall short of the planned target.
- 4.8 In line with best practice, we would advise that the estimate of future losses be based on qualitative assessment of existing employment sites.
- 4.9 In North West Leicestershire, Roger Tym & Partners produced such an assessment for the Council in August 2010, updating the 2005 employment land study. That assessment should be used to produce an initial estimate and trajectory of the existing employment land that is no longer fit for purpose and could or should be released for other uses over the plan period.
- 4.10 An alternative and simpler way of estimating for future losses would be to look at the history of past losses.
- 4.11 Regardless of the method by which future losses are estimated, these estimates should be kept under review, based on monitoring information. The release of new development sites should be adjusted accordingly, so that net land supply for different employment uses does not fall short of the agreed targets.

## Choice, competition and flexibility

- 4.12 Finally we advise briefly on the margin of available development land that should be provided to allow for choice. This advice supersedes the 2005 employment land review, whose recommended method has been overtaken by more recent good practice.
- 4.13 In an area where the planning system provides exactly enough development land each year to meet the agreed planning target, it is almost certain that land supply in practice will fall short of demand, and hence development and employment growth will fall short of the target. One reason for this is that at any one time some development and redevelopment sites will be in the development pipeline – and thus not actually delivering jobs and floorspace. Indeed some sites may remain in the pipeline for a long time or forever, if they are constrained by factors such as bad ground conditions or lack of infrastructure. Moreover, there will be no room for choice or to accommodate the qualitative requirements of different occupiers and developers, and because occupiers and developers have no choice landowners may enjoy monopoly power.

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<sup>9</sup> More detailed discussion of how to allow for losses and churn, and also for choice and competition (see next section) are found in an RTP report quoted earlier: Roger Tym & Partners for Yorkshire Forward (2010), *Planning for Employment Land: Translating Jobs into Land*, April

- 4.14 All this suggests that the planning authority should provide a margin, or allowance, so that at any one time actual provision is above the land provision target. There is no 'scientific' way to measure what this margin should be. In our opinion, best practice is to provide a rolling five-year land reserve, as is required for housing by Planning Policy Guidance (PPS)3 and for employment by several regional strategies, including those for Yorkshire and the Humber and the West Midlands. This means that, at any one time, there should be enough readily available (unconstrained) land to meet the agreed provision target for each employment use (including for the next five years).



## **APPENDIX 1**

### **OXFORD ECONOMICS NOTE ON THE FORECASTS**





## North West Leicestershire

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*Summary of Oxford Economics' population, housing and workforce jobs forecasts for North West Leicestershire, consistent with 2031 outlooks presented in the Leicester and Leicestershire Housing Requirements Project, 2011*

Prepared for Royer Tym and Partners

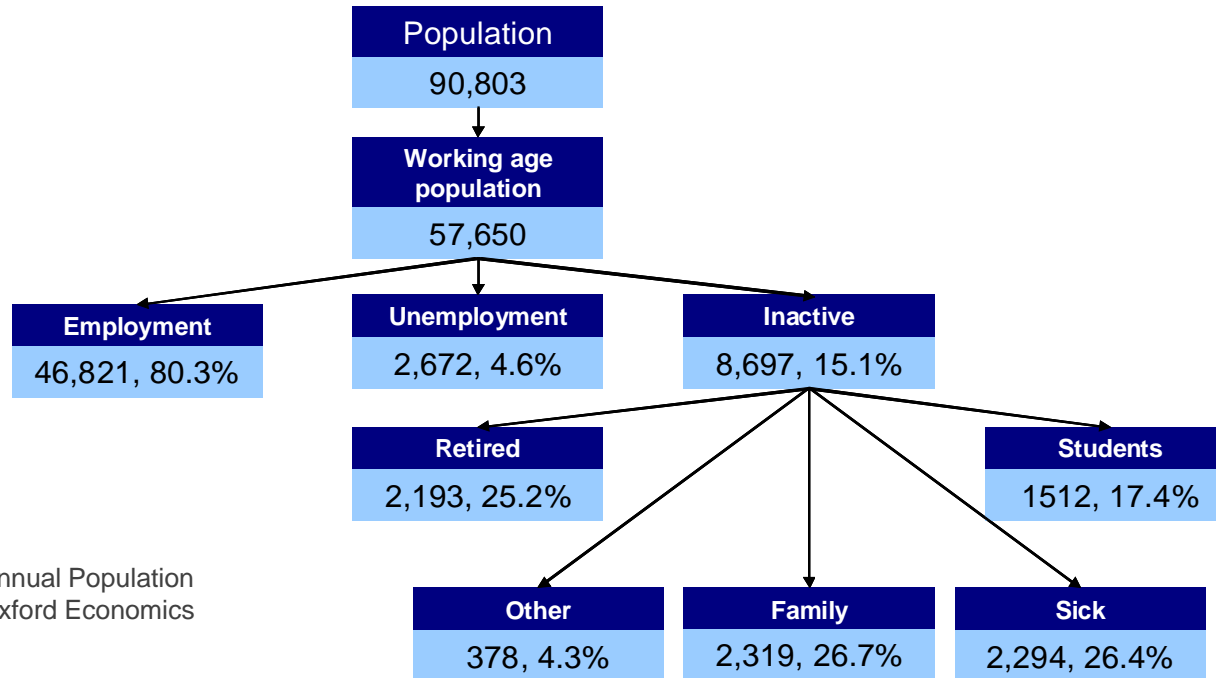
# Introduction and overview

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- Oxford Economics were commissioned to provide updated population, housing stock and workforce jobs forecasts for the North West Leicestershire local authority, on a consistent basis with the 10% employment growth scenarios produced as part of the Leicester and Leicestershire Housing Requirements Project (LLHRP).
- As such, the forecasts presented in this note are consistent with population growth of 17,566 and housing stock growth of 9709 over the period 2006-2031.
- In order to create the series, Oxford Economics applied the 2006 – 2031 projected growth from the LLHRP population and housing stock forecasts to the forecasts from the Oxford Economics' local model. This methodology has allowed the official data published after the LLHRP forecasts were generated to be incorporated in the new figures, whilst keeping the 2006-2031 growth consistent across both series.
- As such, published data up until 2010 suggests that 8.5% of the projected population growth in the LLHRP projections and 8.8% of the housing stock growth had already been realised by 2010.
- The Oxford Economics suite of models are economically driven, considering primarily labour market and output growth. The models are not population or housing led, with population driven by employment outlooks to ensure viable employment rates. For this reason, the current Oxford baseline outlook at the UK level suggests 90,000 net in-migration per annum (pa) over the forecast period, in comparison to the net 200,000 pa of 2010 official national population projections. Oxford's housing stock forecasts are purely demand driven and do not account for supply side constraints.

# North West Leicestershire – a reminder: the people

Population breakdown, North West Leicestershire, 2010

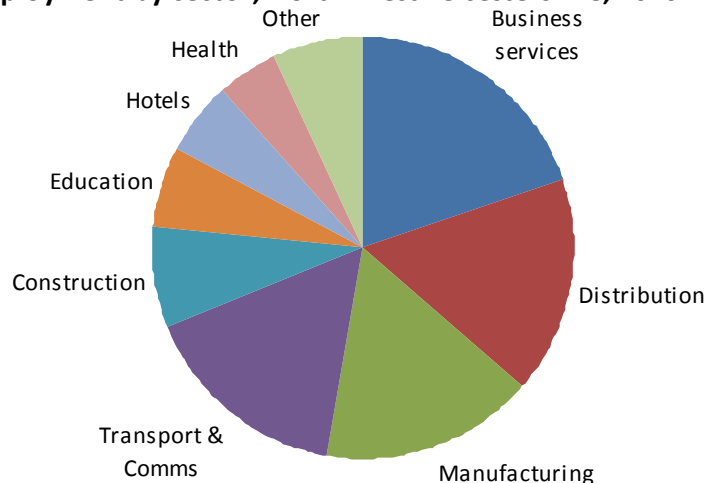


Source: Annual Population Survey, Oxford Economics

- North West Leicestershire had an employment rate of over 80% in 2010, significantly above the UK average of 72%
- The dependency ratio (% of total population that are of working age) is 63.5% in North West Leicestershire, 1.7pp above than the UK average.
- However, 26.4% of the inactive are classed as long term sick, over 4pp above the UK average.

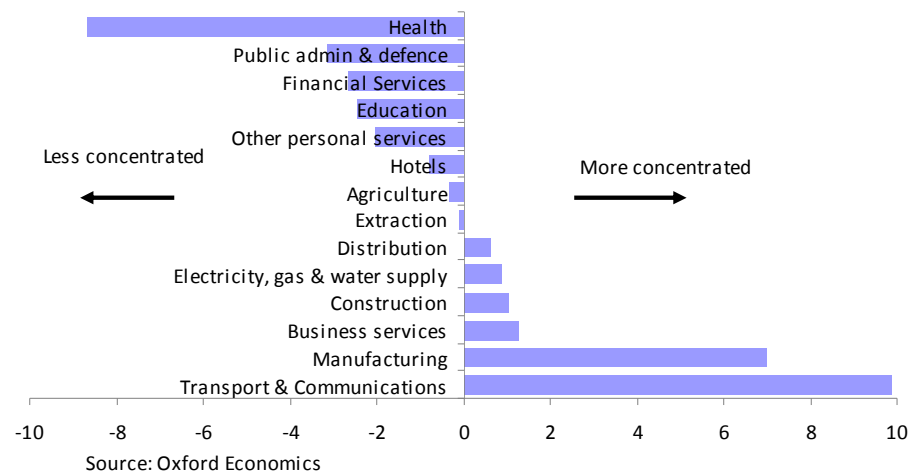
# North West Leicestershire – a reminder: the economic structure

Employment by sector, North West Leicestershire, 2010



Source: Oxford Economics

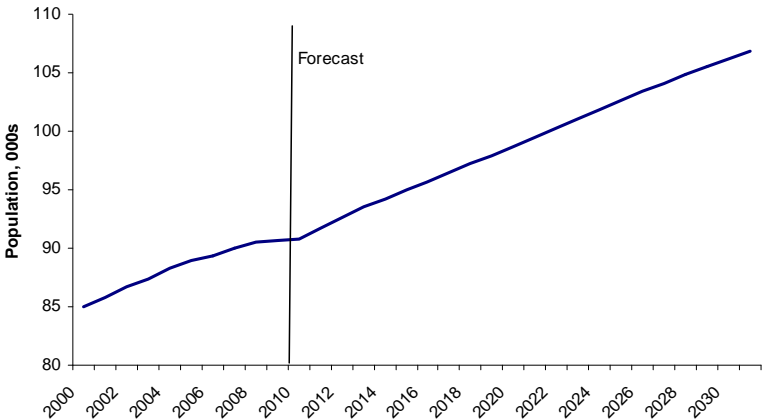
Relative sectoral concentration, North West Leicestershire and the UK, 2010



- The business services sector is the largest employment sector, accounting for 19% of total workforce jobs in NW Leicestershire. Relative to the UK, the data suggest North West Leicestershire has specialisms in the transport and communications sector and the manufacturing sector.
- Given these identified specialisms, it is likely that a considerable portion of the business services employment is directly involved in supporting the practical sectors, through labour recruitment (temporary workers) and office support functions.
- The implications of the employment structure on land planning include the need to provide suitable land for industrial and warehouse space going forward, in addition to office space.
- Land use planning will also need to recognise the internal rebalancing of manufacturing operations, which are moving away from the traditional 'production line' towards high value added activity, often requiring sophisticated office and laboratory space in place of the traditional manufacturing unit.

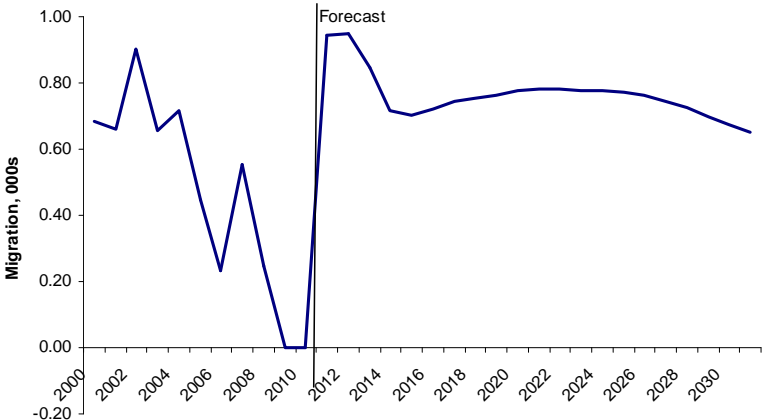
# The outlook - demographics

Population, NW Leicestershire, 2000 - 2031



Source: Oxford Economics, Leicestershire Housing Requirements Project

Migration, NW Leicestershire, 2000 - 2031

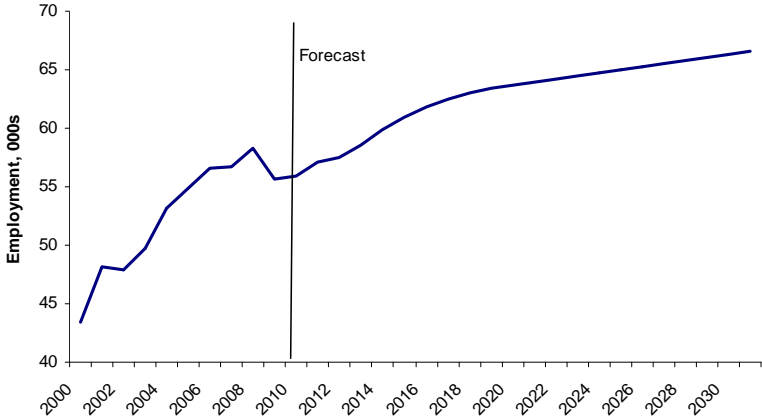


Source: Oxford Economics, Leicestershire Housing Requirements Project

- The population in NW Leicestershire has expanded by 6.8% between 2000 and 2010, compared to the UK average of 5.7%.
- Population is forecast to continue to expand, with 16,100 additional people living in NW Leicestershire in 2031, from 2010 levels.
- Net migration, which has been negligible over the past two years, despite the UK’s strong migration performance, is forecast to increase to over 900 people in 2011 and remain positive over the forecast period.
- The positive migration outlook in NW Leicestershire has been forecast to ensure employment rates in the district remain viable; with an employment rate of 80% in 2010, there is not much further scope for employment growth without additional migrants.

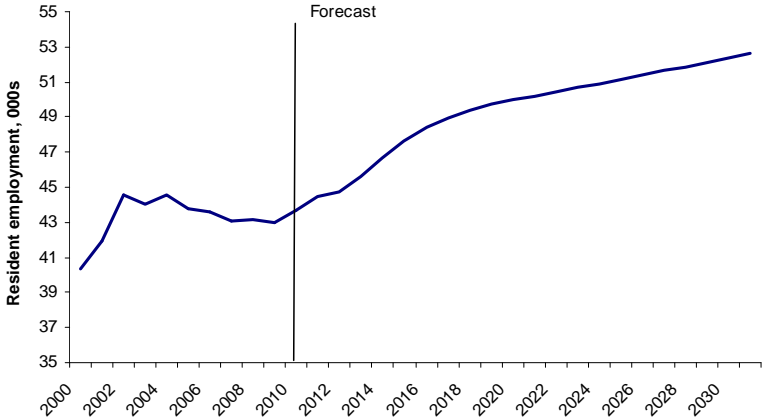
# The outlook - employment

**Total employment (workplace based jobs), NW Leicestershire, 2000 - 2031**



Source: Oxford Economics, Leicestershire Housing Requirements Project

**Resident employed people, NW Leicestershire, 2000 - 2031**



Source: Oxford Economics, Leicestershire Housing Requirements Project

- After experiencing strong workforce job growth of 35% between 2000 and 2008, NW Leicestershire’s labour market decreased by 2.1% over the recessionary period.
- Whilst employment growth is not forecast to return to its pre-recession trajectory, it is forecast to expand, with 10,700 additional workforce jobs forecast to be in NW Leicestershire in 2031 from 2010 levels.
- Over the pre-recession period, resident employed people did not expand at the same rate as workforce jobs. Due to the nature of the subtle data differences, this suggests that either many people held multiple jobs over the period or a greater proportion of the NW Leicestershire labour force was taken by people commuting in from outside the district. Considering the traditionally high resident employment rate in NW Leicestershire, the latter is more likely.
- The forecast for resident employed people suggests there will be 8,900 additional resident employed people in NW Leicestershire by 2031, from 2010 levels. The difference between the workforce jobs outlook and the resident employed people outlook can also be explained by the factors discussed above.

# The outlook – sectoral employment

Employment (workforce jobs) by sector, North West Leicestershire, 2000 - 2031

	2000-2008		2008-2011		2011-2031	
	000s	%	000s	%	000s	%
Agriculture	0.1	12.5	0.2	32.2	-0.2	-23.0
Extraction	0.0	-8.7	-0.3	-84.1	0.0	-56.3
Manufacturing	-2.4	-21.6	0.9	10.8	-1.3	-13.6
Electricity, gas & water supply	0.6	450.3	0.1	15.8	0.1	9.6
Construction	0.7	15.8	-0.9	-18.2	0.8	18.1
Distribution	2.9	49.9	0.3	3.2	1.7	19.0
Hotels	0.4	12.2	-0.3	-9.5	0.2	8.1
Transport & Communications	3.7	56.8	-0.9	-9.2	2.0	22.0
Financial Services	0.2	44.1	-0.2	-29.2	-0.2	-41.1
Business services	5.7	127.0	0.6	5.7	5.7	52.9
Public admin & defence	0.1	14.6	-0.1	-7.1	0.0	-3.8
Education	1.0	47.7	0.1	3.1	-0.2	-6.8
Health	1.6	83.6	-1.0	-28.9	0.3	13.5
Other personal services	0.5	31.9	0.3	17.1	0.7	28.5
<b>Total</b>	<b>14.9</b>	<b>34.4</b>	<b>-1.2</b>	<b>-2.1</b>	<b>9.5</b>	<b>16.7</b>

Source: Oxford Economics

Employment (workforce jobs) by sector, NW Leicestershire, 2006-2031

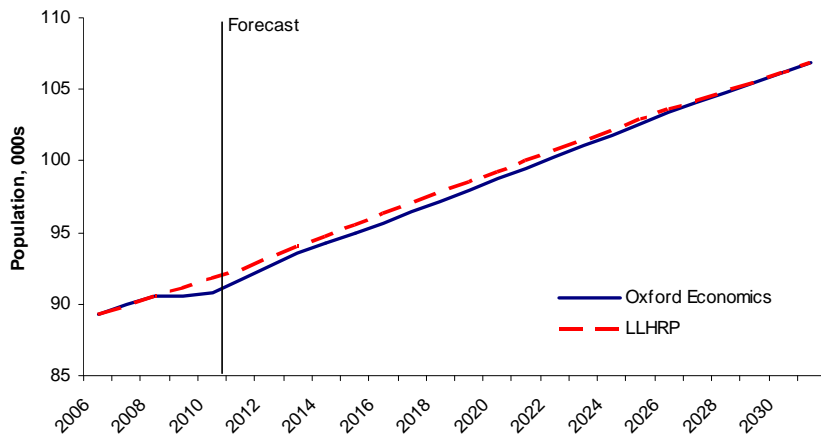
	2006 - 2031	
	000s	%
Agriculture	0.0	5.1
Extraction	-0.3	-93.0
Manufacturing	-0.8	-9.0
Electricity, gas & water supply	0.4	68.3
Construction	-2.0	-28.2
Distribution	2.7	32.9
Hotels	-0.9	-22.2
Transport & Communications	1.7	18.0
Financial Services	-0.3	-46.3
Business services	9.0	121.2
Public admin & defence	-0.2	-18.7
Education	-0.6	-17.2
Health	0.3	13.0
Other personal services	1.0	49.9
<b>Total</b>	<b>10.0</b>	<b>17.6</b>

Source: Oxford Economics

- The employment outlook is driven by the business services sector, which is forecast to account for over half of net employment growth over the 20 year period to 2031. This outlook is underpinned at a UK level by confidence in the UK's ability to remain and develop as a key provider of 'tradable services', with a focus on export orientated growth.
- At a local level, NW Leicestershire's business services outlook is driven by the sector's continuing role in supporting the manufacturing areas as more 'traditional' manufacturing operations are redefined within the professional services sector.
- Total employment growth is forecast to be modest, with the outlook suggesting there will be fewer net jobs created in NW Leicestershire over the twenty year forecast period than were created between 2000 and 2008.

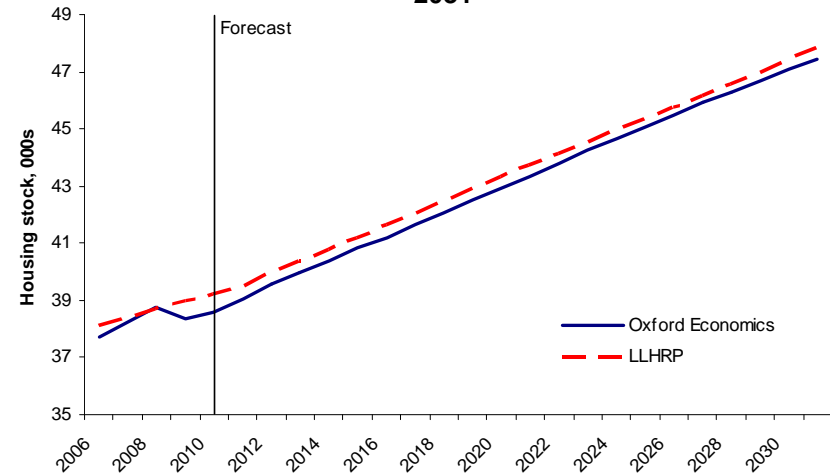
# Oxford and LLHRP – a discussion of the differences

Population, North West Leicestershire, Oxford Economics and LLHRP forecasts, 2006-2031



Source: Oxford Economics, Leicestershire Housing Requirements Project

Housing stock forecasts, Oxford Economics and LLHRP, 2006 - 2031



Source: Oxford Economics, Leicestershire Housing Requirements Project

- As mapped in the charts above, the differences between the Oxford forecasts and the previous LLHRP series are minor. The most obvious differences are evident in the 2008 – 2011 period, as the latest published data suggest sluggish growth not evident in the LLHRP forecasts.
- Whilst the 2006-2031 growth has remained consistent over the two series, the absolute 2031 values differ. Population differs by less than 1%, with the Oxford Economics series suggesting less than 50 additional people in 2031 than the original LLHRP series.
- The Oxford Economics series forecasts 387 fewer housing units in 2031, as the outlook factors in the latest data trends (a fall in housing stock) not included in the LLHRP series.
- Any more significant variances are likely to be due to differing sources. For reference, Oxford Economics source population data from the ONS mid-year population estimates and housing stock data from CLG’s Housing Strategy Statistical Appendix (HSSA).

# The impact of official data trends

## Data and forecasts, North West Leicestershire, 2006-2031

	Population			Housing Stock		
	2006-10	2010-31	Total	2006-10	2010-31	Total
Oxford Economics	1501	16065	17566	855	8854	9709
LLHRP	2559	15007	17566	1132	8577	9709

Source: Oxford Economics, Leicestershire Housing Requirements Project

- The LLHRP forecast suggested that there would be 17,566 additional people in NW Leicestershire in 2031, from 2006 levels and 9709 additional houses over the same period. The LLHRP forecasts did not account for the latest published data up until 2010.
- As a result, the table above highlights how the official data has suggested lower growth over the 2006-10 period than the LLHRP forecast; in numerical terms, the LLHRP forecasts suggested that 14% of the total 2006-31 population growth would be realised before 2010; in reality, the data suggests that only 8.5% of the forecast growth has indeed been realised over the 2006-10 period. For the housing stock, the figures are 11.7% and 8.8% respectively.
- To create a series consistent with the LLHRP forecasted 2006-2031 growth, Oxford Economics has had to redistribute the unachieved growth into the 2010-31 period.
- In standard practice, the more sluggish 2006-10 growth would result in the overall 2006-2031 forecast to be revised downwards in line with the data trends, assuming all other factors remained consistent. Nevertheless, as highlighted earlier, the variance in growth between the Autumn 2011 Oxford baseline and the LLHRP were less than 5% for both population and housing stock, underpinning a confidence in the Oxford series.

# Conclusion

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- Oxford Economics have created a robust data series, consistent with LLHRP's projected growth in population and housing stock. A workforce jobs series has also been created on a consistent basis with the population and housing stock outlooks.
- The outlook for North West Leicestershire is strong, considering the current uncertainty, with population forecast to grow by 15% between 2011 and 2031 and housing stock forecast to grow by 8.4% over the same period.
- The employment outlook for the district is modest. The business services sector is forecast to drive employment growth, with 60% of net additional jobs between 2011 and 2031 attributable to the sector.
- This outlook will have significant implications in an area with a traditional manufacturing background. By 2031, 25% of total employment will be in the business services sector, compared to 18% currently. The need to transform existing industrial space into suitable office space will be one of the main challenges.

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## **APPENDIX 2**

### **OXFORD ECONOMICS EMPLOYMENT FORECASTS**



Summary variables, numbers																																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Population	85022	85775	86704	87398	88302	88894	89302	90002	90498	90594	90803	91745	92693	93540	94258	94962	95683	96425	97181	97946	98723	99502	100282	101060	101838	102610	103372	104117	104843	105543	106219	106868
Migration	685	660	902	655	717	447	231	552	246	2	-2	942	948	847	719	704	721	742	756	765	777	779	780	778	778	772	762	745	726	700	676	649
Housing stock	-	-	36130	36516	37411	37678	37727	38265	38754	38364	38582	39050	39557	40002	40408	40825	41213	41662	42079	42537	42953	43353	43790	44229	44657	45076	45478	45909	46288	46694	47079	47436
Resident employed people	40345	41962	44526	44034	44575	43742	43569	43090	43156	42964	43701	44479	44727	45588	46645	47657	48396	48950	49380	49703	49986	50219	50443	50662	50861	51114	51388	51638	51881	52114	52365	52627
Total employment (workforce jobs)	43387	48151	47942	49772	53172	54846	56637	56723	58329	55627	55868	57091	57494	58560	59812	60983	61859	62518	63011	63378	63720	63990	64250	64510	64773	65038	65302	65565	65825	66072	66333	66599

Summary variables, growth rate (%)																																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Population	-	0.9	1.1	0.8	1.0	0.7	0.5	0.8	0.6	0.1	0.2	1.0	1.0	0.9	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.6	0.6
Migration	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Housing stock	-	-	-	1.1	2.5	0.7	0.1	1.4	1.3	-1.0	0.6	1.2	1.3	1.1	1.0	1.0	0.9	1.1	1.0	1.1	1.0	0.9	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.9	0.8	0.8	
Resident employed people	-	4.0	6.1	-1.1	1.2	-1.9	-0.4	-1.1	0.2	-0.4	1.7	1.8	0.6	1.9	2.3	2.2	1.6	1.1	0.9	0.7	0.6	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.5	0.5
Total employment (workforce jobs)	-	11.0	-0.4	3.8	6.8	3.1	3.3	0.2	2.8	-4.6	0.4	2.2	0.7	1.9	2.1	2.0	1.4	1.1	0.8	0.6	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	

Employment (workforce jobs) by sector																																
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Agriculture	677	640	606	611	717	809	737	666	761	758	924	1006	1010	1001	991	980	969	957	945	932	919	905	891	877	864	851	838	825	812	799	787	775
Extraction	399	296	323	249	258	422	361	323	365	64	65	58	55	53	51	49	48	46	44	43	41	39	38	36	34	33	32	30	29	28	26	25
Manufacturing	10960	10433	10420	10109	9196	8725	9040	8961	8593	8688	8858	9519	9538	9607	9671	9705	9674	9597	9510	9420	9330	9229	9128	9027	8926	8826	8725	8626	8526	8427	8328	8229
Food, drinks & tobacco	2606	2536	2541	2275	1950	1331	1353	1398	1539	1433	1494	1559	1550	1543	1526	1506	1482	1456	1431	1406	1381	1357	1333	1309	1286	1263	1241	1219	1197	1175	1154	1133
Textiles	1004	773	634	617	323	312	274	361	426	270	277	293	275	256	237	219	202	186	171	157	145	133	122	113	104	95	88	81	74	68	63	58
Wood products	419	242	222	339	256	250	256	287	400	161	162	176	177	178	178	178	176	174	172	169	167	165	162	160	157	155	152	150	148	145	143	141
Pulp, paper & printing	447	509	499	611	710	721	708	676	700	598	618	690	676	672	664	656	647	636	625	614	604	593	583	573	562	552	542	532	522	512	503	493
Coke, oil refining & nuclear fuel	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Chemicals & man-made fibres	1084	929	1037	896	794	782	769	676	627	512	478	463	451	438	424	410	395	380	366	352	338	326	313	301	289	278	267	256	246	236	227	
Rubber & plastic products	862	1095	1111	1073	1103	965	850	812	647	695	764	810	842	856	877	894	902	886	871	855	840	824	809	794	780	766	752	738	724	711	698	
Other non-metallic mineral products	1381	1162	1252	1496	1512	1773	1874	1960	1295	1878	1964	2171	2155	2181	2217	2255	2268	2264	2254	2244	2235	2224	2207	2191	2174	2157	2140	2124	2107	2091	2074	2057
Metals	649	525	569	516	560	605	631	515	498	1104	1062	1079	1065	1049	1026	1002	976	947	919	892	866	841	817	793	770	747	725	704	684	664	644	625
Machinery & equipment	960	1147	1061	792	848	867	866	984	1116	737	716	801	827	858	886	904	913	917	920	922	923	921	919	916	913	908	903	897	891	884	877	
Electrical optical equipment	806	840	830	780	551	586	654	513	354	631	609	679	686	700	713	724	734	743	751	760	769	767	771	775	779	781	783	784	784	784	783	
Transport equipment	469	385	441	476	400	370	592	568	791	497	527	588	628	671	716	749	773	793	813	831	848	864	879	892	905	916	927	937	946	954	961	967
Other manufacturing	275	291	223	239	189	163	213	210	200	173	188	196	194	194	193	193	191	190	188	187	185	184	183	181	180	178	177	176	174	173	171	170
Electricity, gas & water supply	124	538	257	315	455	544	513	511	681	681	795	788	783	789	796	801	806	811	817	822	826	831	835	839	842	846	849	853	856	858	861	863
Construction	4453	5135	5052	4977	4915	5822	6932	5369	5156	4360	4211	4216	4253	4351	4450	4520	4575	4622	4655	4681	4708	4731	4754	4778	4802	4827	4852	4878	4904	4929	4955	4981
Distribution	5884	6685	7252	7551	8914	7948	8153	8287	8821	9276	8981	9107	9194	9380	9586	9766	9916	10044	10147	10234	10309	10360	10407	10455	10503	10552	10599	10647	10695	10743	10791	10835
Hotels	2931	3754	3619	3558	3499	3900	4134	4364	3287	3100	2987	2975	2999	3044	3095	3135	3167	3190	3206	3218	3225	3225	3223	3222	3221	3221	3220	3220	3219	3218	3218	3215
Transport & Communications	6440	6831	7420	8436	8443	8718	9484	9309	10098	8977	8689	9169	9288	9494	9738	9987	10192	10339	10447	10534	10611	10675	10730	10782	10835	10889	10943	10997	11052	11098	11144	11190
Financial Services	501	1147	829	665	831	813	560	712	721	520	525	510	497	491	482	471	460	449	439	430	416	405	394	382	371	359	348	336	324	313	301	
Business services	4485	5661	5145	5498	7335	7878	7437	9680	10180	10171	10698	10758	10978	11473	12069	12623	13034	13393	13679	13883	14090	14296	14513	14730	14946	15161	15374	15586	15795	15999	16219	16452
Public admin & defence	911	1560	1735	1694	1884	1075	1147	1043	1024	1021	969	952	923	906	898	896	896	896	896	900	903	905	908	911	913	916	919	922	925	927	930	932
Education	2090	1723	1772	1731	2216	3264	3579	3055	3087	3346	3349	3182	3151	3104	3059	3038	3025	3011	3002	2998	2997	2996	2993	2990	2987	2984	2982	2979	2976	2972	2968	2964
Health	1874	1903	1849	2593	2666	2678	2456	2205	3442	2328	2504	2446	2437	2436	2446	2463	2478	2498	2524	2550	2572	2592	2612	2632	2653	2673	2694	2715	2735	2755	2775	
Other personal services	1526	1739	1547	1651	1681	2108	2020	2072	2014	2262	2200	2357	2321	2375	2440	2521	2592	2643	2682	2717	2749	2777	2801	2826	2851	2876	2902	2928	2954	2979	3005	3028
Total	43387	48151	47942	49772	53172	54846	56637	56723	58329	55627	55868	57091	57494	58560	59812	60983	61859	62518	63011	63378	63720	63990	64250	64510	64773	65038	65302	65565	65825	66072	66333	66599

Employment (workforce jobs) by sector, growth (%)																											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017									



## **APPENDIX 3**

### **DEFINITIONS OF OFFICE, INDUSTRIAL AND WAREHOUSE JOBS**



<b>Industrial Sectors</b>	<b>SIC (2003)</b>	<b>Activities</b>
Manufacturing	15.11-37.20 (ex publishing, 22.11-22.15)	<ul style="list-style-type: none"> <li>Includes all manufacturing, including recycling, but excludes publishing)</li> </ul>
Some Construction	45.3-45.4	<ul style="list-style-type: none"> <li>Electricians</li> <li>Plumbing</li> <li>Other building installation</li> <li>Plastering</li> <li>Joinery installation</li> <li>Floor and wall covering</li> </ul>
Motor Vehicle Activities	50.20, 50.40	<ul style="list-style-type: none"> <li>Maintenance and repair of motor vehicles</li> <li>Sale, maintenance and repair of motor cycles and related parts and</li> </ul>
Sewage and Refuse Disposal	90.00	<ul style="list-style-type: none"> <li>Sewage and refuse disposal, sanitation and similar activities.</li> </ul>
Labour Recruitment and Provision of Personnel (part) <sup>10</sup>	74.5	<ul style="list-style-type: none"> <li>Labour recruitment and provision of personnel</li> </ul>
<b>Warehousing Sectors</b>	<b>SIC (2003)</b>	<b>Activities</b>
Wholesale	51.11-51.70	<ul style="list-style-type: none"> <li>Wholesale on a fee contract basis</li> <li>Wholesale of goods</li> </ul>
Freight Transport by Road	60.24	
Cargo Handling	63.11	
Storage and Warehousing	63.12	
Other Supporting Land Transport Activities	63.21	
Post and Courier Activities	64.11-64.12	
Packaging Activities	74.82	<ul style="list-style-type: none"> <li>Packaging activities</li> </ul>
Labour Recruitment and Provision of Personnel (part)	74.5	
<b>Office Sectors (including R&amp;D)</b>	<b>SIC (2003)</b>	<b>Activities</b>

<sup>10</sup> Labour Recruitment and Provision of Personnel covers workers employed through agencies. These workers operate in a wide range of activities throughout the economy. Therefore, we allocate them to industrial, warehouse, office and non-B sectors in proportion to their shares in the district's total employment.

<b>Industrial Sectors</b>	<b>SIC (2003)</b>	<b>Activities</b>
Some Other Business Activities	74.60, 74.83, 74.84, 74.1, 74.2, 74.3, 74.4	<ul style="list-style-type: none"> <li>▪ Investigation and security activities</li> <li>▪ Secretarial and translation activities</li> <li>▪ Other business activities nec</li> <li>▪ Accounting/bookkeeping activities etc</li> <li>▪ Architectural/engineering activities etc</li> </ul>
<b>Office Sectors (continued)</b>	91.11, 91.12, 91.20,	<ul style="list-style-type: none"> <li>▪ Activities: business/employers orgs</li> </ul>
Some Social and Personal	91.32, 91.33, 92.11,	<ul style="list-style-type: none"> <li>▪ Activities of professional orgs</li> </ul>
Service Activities	92.12, 92.20, 92.40	<ul style="list-style-type: none"> <li>▪ Activities of trade unions</li> <li>▪ Activities of political orgs</li> <li>▪ Activities other membership orgs</li> <li>▪ Motion picture and video production</li> <li>▪ Motion picture and video distribution</li> <li>▪ Radio and television activities</li> <li>▪ News agency activities</li> </ul>
Administration of the State	75.1, 75.3	<ul style="list-style-type: none"> <li>▪ Administration of the State and the economic and social policy of the community</li> <li>▪ Compulsory social services activities</li> </ul>
Publishing	22.1	
Financial intermediation	65, 66, 67	<ul style="list-style-type: none"> <li>▪ Financial intermediation, except insurance and pension funding</li> <li>▪ Insurance and pension funding, except compulsory social security</li> <li>▪ Activities auxiliary to financial intermediation</li> </ul>
Real Estate and Business activities	70, 72, 73	<ul style="list-style-type: none"> <li>▪ Real estate activities</li> <li>▪ Computer and related activities</li> <li>▪ Research and development</li> </ul>
Labour Recruitment and Provision of Personnel (part)	74.5	