

# Warwickshire Structure Plan

## The Structure Plan and Commuting Patterns in Warwickshire

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*The purpose of this paper is to outline the potential impact of the Structure Plan policies on commuting patterns in Warwickshire. It describes a simple model which has been used and the assumptions made within that model.*

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### 1 The model

- 1.1 The model consists of three components;
- a 1991 base
  - BSL forecasts for 1996, 2001, 2006, 2011
  - Structure Plan forecasts for 1996, 2001, 2006, 2011

### 2 Deriving the 1991 base

- 2.1 The base for the model is derived from the 1991 Census of Population Travel to Work Statistics. In particular the model focuses on workers and residents in and from the following areas;
- Each Warwickshire district
  - Coventry
  - Birmingham and Solihull
  - Tamworth
  - Redditch
  - Leicestershire
  - Northamptonshire
  - Other Regions
- 2.2 A matrix of where people live and work is derived from the 1991 Census of Population (see Appendix 1). From this a profile of the proportions of workers in each district from each origin is calculated, for example, the proportion of jobs in Rugby district taken by Warwick residents, Coventry residents, Tamworth residents etc. Each district profile adds to 100%, which equates to the “Jobs in Area” total.
- 2.3 A series of proportions for destinations of out-commuters are also calculated for each district, e.g. the proportion of out-commuters from Nuneaton & Bedworth working in Coventry, working in Birmingham and Solihull etc. This is calculated from the residual of labour supply in each district minus residents working in the County.
- 2.4 The next stage is to replace the Census “Jobs In Area” results with figures supplied by Business Strategies Limited (BSL). The two differ as they were recorded at different times during 1991 - one in April and one in September - and are based on two different data sets, the Census of Population and the Census of Employment. Using the proportions matrix described above, the origins and destinations of workers are then derived.

- 2.5 BSL estimates a labour supply total for Warwickshire, which is apportioned to each district reflecting the distribution of labour supply from the Census of Population. A County ILO (International Labour Organisation definition) unemployment total is also provided by BSL, which is distributed in the same way. District labour supply estimates are used as control totals for the resident workforces in each district. Out-commuting is again represented as the difference between the number of local people with a job (i.e. the absolute total minus the unemployment total) and the sum of local people working in the district, and is apportioned as in the 1991 Census.

### **3 BSL Forecasts for 1996, 2001, 2006, and 2011.**

- 3.1 Estimates of numbers of residents working in their home district, numbers of out-commuters, and numbers of in-commuters are derived in the same way for 1996, 2001, and 2006, i.e. controlling to BSL labour supply, unemployment, and jobs in area forecasts. *These assume the same profiles of in and out-commuting as at the time of the 1991 Census of Population.*
- 3.2 Forecasts for 2011 are based on Warwickshire County Council estimates of labour supply, unemployment and jobs in area, based on the projected trend of BSL forecasts.

### **4 Structure Plan Forecasts, 1996, 2001, 2006, 2011**

- 4.1 Forecasts for 1996 are assumed to be the same as the BSL forecasts for 1996, as this is taken as the starting point for the Structure Plan policies.
- 4.2 The 2011 forecasts are at end of the Structure Plan period, when it is assumed that the full effects of Structure Plan policies have fed through.
- 4.3 The Structure Plan forecasts for 2011 are derived by;
- Changing the Jobs in Area forecasts. Each additional hectare of industrial land is assumed to support 48 jobs in addition to the BSL forecast
  - Labour supply forecasts in each district are changed by taking the additional household allocations for each district, and assuming that each additional household adds one person to the districts labour supply total in addition to the BSL forecast
  - Unemployment is intuitively assumed to be around half the level of the 1996 BSL forecast by 2011.
- 4.4 Structure plan forecasts for 2001 and 2006 are interpolated from the 2011 forecast, assuming that the Structure Plan policies are allocated consistently throughout the time period.

### **5 Model Outputs**

- 5.1 The 1991 Census results show that in both Nuneaton & Bedworth and Stratford districts around 25% of local people travel outside their district to work. Amongst out-commuters from Nuneaton & Bedworth the most popular workplace is Coventry, in the case of Stratford out-commuters are more likely to travel to Birmingham and Redditch. In Rugby and Warwick districts around one in three workers travel outside their home district to work, in both cases Coventry is the most popular workplace. However, in North Warwickshire almost 50% of local workers leave the district to work, half of these working in Birmingham, with other popular workplaces including Coventry, Tamworth and Other Regions.

- 5.2 The long term loss of mining and manufacturing jobs from northern districts of the County has had an impact on the relationship between the supply of jobs to the supply of labour in each district. Forecasts suggest a continuing of this trend, with job growth to 2011 taking place particularly in service industries. Growth is forecast to be greater in Stratford and Warwick districts than in the other districts. This will continue reducing the ratio of jobs to labour supply in the northern districts, both increasing unemployment and the numbers of local people travelling outside their district of residence to find work.
- 5.3 Structure Plan policy to direct additional employment growth to northern districts will improve the ratio of supply of jobs to the supply of labour, particularly in North Warwickshire. However, the Structure Plan policies are also likely to improve the ratios in all of the other districts (Appendix 13).
- 5.4 As a result, out commuting falls sharply in North Warwickshire and Nuneaton & Bedworth. BSL forecasts suggest that by 2011 only 40% of people in these two districts will work in their district of residence. Structure Plan policies redress this somewhat, reducing out-commuting from 60% to 41% in North Warwickshire by 2011, and from 58% to 51% in Nuneaton & Bedworth (Appendix 14).
- 5.5 Across the County as a whole, Structure Plan policies to increase jobs in the County are forecast to reduce the level of out-commuting by 20,000. However, additional numbers of job opportunities in the County are likely to result in a continued increase in the numbers of in-commuters (Appendix 15).
- 5.4 As a result of the significant improvement in job opportunities underpinning the Structure Plan policies, unemployment is also likely to follow a general downward trend, to around half April 1996 levels by 2011 (Appendix 16).

## Appendices

1. Matrix layout
2. 1981 travel to work patterns from 1981 Census
3. 1991 travel to work patterns from 1991 Census
4. 1991 travel to work proportions from 1991 Census
5. 1991 travel to work patterns applied to BSL model figures
6. 1996 estimated travel to work patterns
7. 2001 forecast travel to work patterns
8. 2006 forecast travel to work patterns
9. 2011 forecast travel to work patterns
10. 2001 structure plan forecast travel to work patterns
11. 2006 structure plan forecast travel to work patterns
12. 2011 structure plan forecast travel to work patterns
13. The dormitory index; job supply to labour supply
14. The travel to work trend; % employed who live and work in the same district
15. The commuting trend; commuters to and from Warwickshire
16. Employment Trends in Primary, Production, and Service Industries
17. Unemployment rate in Warwickshire

## Appendix 1: Matrix Layout

*Where workers taking jobs in the district live (Add up to Jobs in Area total)*

<b>Census - 1991</b>	Jobs in Area	North Warks	Nuneaton & Bedworth	Rugby	Stratford	Warwick	<b>Warwickshire</b>	Coventry	B'ham & Tamworth Solihull	Redditch	Le'tershire	Northants	Other Regions	
North Warwickshire	24090	12580	2310	80	70	70	<b>15110</b>	460	2620	2480	20	1190	60	2150
Nuneaton & Bedworth	38930	2380	27820	570	130	220	<b>31120</b>	3710	460	310	30	2220	120	960
Rugby	42000	150	1840	27790	550	690	<b>31020</b>	5270	300	40	30	2130	1880	1330
Stratford	44700	30	120	280	33250	1900	<b>35580</b>	760	1540	30	2240	140	160	4250
Warwick	58500	270	900	1240	5820	39960	<b>48190</b>	4630	2160	120	180	280	390	2550
<b>Warwickshire</b>	<b>208220</b>	<b>15410</b>	<b>32990</b>	<b>29960</b>	<b>39820</b>	<b>42840</b>	<b>161020</b>	<b>14830</b>	<b>7080</b>	<b>2980</b>	<b>2500</b>	<b>5960</b>	<b>2610</b>	<b>11240</b>
Coventry		1410	12390	4630	1550	6150	<b>26130</b>							
Birmingham & Solihull		6280	1490	710	3840	3180	<b>15500</b>							
Tamworth		1610	110	20	40	10	<b>1790</b>							
Redditch		30	20	20	2040	120	<b>2230</b>							
Leicestershire		1210	3570	1120	110	180	<b>6190</b>							
Northamptonshire		60	130	2880	310	270	<b>3650</b>							
Other Regions		1090	960	1120	3140	1570	<b>7880</b>							
In Work		27100	51660	40460	50850	54320	<b>224390</b>							
Unemployed		2264	4969	2804	2627	3749	<b>16413</b>							
Labour Supply		29364	56629	43264	53477	58069	<b>240803</b>							

*Side Axis - Where district residents work (Add up to In Work total)*



