

## 10. Comparison with national trends

### 10.1 Introduction

We now move on from description of the interventions in the three towns – that is, the ‘outputs’ of the Smarter Choice Programmes – to an examination of how travel patterns changed, or the ‘outcomes’. For this, we will look in Chapters 11-17 at a range of data, including workplace, school and household travel surveys, bus patronage counts, and a variety of manual and automatic count data for walking, cycling and traffic.

However, before examining the data on travel patterns in the three towns, it is important to understand ‘what would have happened anyway’, by examining changes in travel patterns elsewhere over the same time period as that of the Sustainable Travel Towns work.

The possibility of comparing each of the towns with a similar ‘control’ town was considered in detail but rejected. This is partly because all locations have their own distinct characteristics, in terms of demography, geography and socio-economics, such that even if it is possible to match on one dimension, it is almost impossible to match on all. Even if it were possible to identify similar towns in terms of ‘background characteristics’, the matched towns would have had their own policy interventions during the period in question, most likely intended to meet similar objectives to those in the Sustainable Travel Towns, and potentially including, to a greater or lesser extent, smarter choice measures. Thus, there could be no guarantee (without detailed investigation of the policies and measures implemented in the comparator towns) that these towns represented a ‘base case’. Moreover, our investigation of the three designated towns has indicated that substantial analysis is required to obtain a full picture of what has happened, and the resources and data were not available to conduct a similar level of analysis in other locations.

Instead, changes in travel behaviour in the Sustainable Travel Towns are compared with changes over the same period in all towns of similar size, as shown by national datasets. Data analysed included:

- special tabulations from the National Travel Survey for towns of between 25,000 and 250,000 people, with respect to all journey purposes, commuter trips, and education trips;
- data from National Road Traffic Estimates for minor and major roads.

These data sets do not provide a ‘no activity’ scenario, since smarter measures have been growing in policy importance nationally. However, they do provide a reasonable indication of what might have happened without the additional Department for Transport funding.

### 10.2 National Travel Survey data

#### 10.2.1 Background

The National Travel Survey comprises a series of household surveys designed to provide a databank of personal travel information for Great Britain, which includes the completion of household travel diaries. It began in July 1988, though there was a substantial change in

methodology in 2002, which was of particular significance for walk trips, hence data have only been used from 2002 onwards for this project.

For this analysis, information about trips and distance have been obtained for trip ‘stages’ rather than main mode information for trips, on the basis that this is likely to be more comparable with the other data we have (particularly for walking and cycling)<sup>1</sup>.

We obtained breakdowns of the data specifically for medium-sized urban areas with a population of 25-250,000, (the most relevant geographical unit used in the National Travel Survey)<sup>2</sup>. Sample size (per year) for these areas ranged from 5,504 to 5,928 people for the period 2002 to 2008. All data given are per person per year. Where the sample sizes are too small, values have been suppressed. Hence, none of the tables include information about travel by ‘motorcycle’, ‘other private transport’, ‘non-local bus’, ‘London Underground’ or ‘other public transport’.

We mainly looked at changes in medium-sized towns between 2004 and 2008 (to match the dates for which we have baseline and ex-post travel survey data in the three Sustainable Travel Towns, discussed in Chapter 13). However, we conducted two further analyses of the national data to check whether our national benchmark was robust. First, we looked at changes for walking and cycling between 2004 and 2006, as well as between 2004 and 2008. This was because there was a change in National Travel Survey methodology in 2007 and 2008, as a result of which short trips may have been under-reported in these years. Second, we looked at three year banded data (rather than data for individual years), due to concern that the small number of trips for some modes (notably cycling) could potentially be subject to random variation.

## 10.2.2 Data analysed for this project

The data obtained are presented in Figures 10.1 to 10.6 and Tables 10.1 to 10.8. The broad trends are as follows.

### For all trip purposes

Walking and cycling fell between 2004 and 2008, according to all measures (though the degree of reduction is more moderate if only analysing data for the period 2004 to 2006<sup>3</sup>). Bus use fell between 2002 and 2005, then increased in 2006, presumably due to concessionary fares, and then declined again. By 2008, trip numbers by bus were broadly similar to those in 2004, but distance travelled had increased by more than 10%. Compared to 2004, in 2008, car driver trips were 1.2% less, whilst car driver distance was 0.9% less. However, both car driver trips and distance increased between 2004 and 2006 (by 1.9% and 2.4% respectively), before dropping back.

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<sup>1</sup> A trip is defined as a one-way course of travel having a single main purpose. A trip consists of one or more stages. A new stage is defined when there is a change in the form of transport or when there is a change of vehicle requiring a separate ticket.

<sup>2</sup> We examined NTS data for trips of all distances, since we have no reason to assume that changes in trip stage numbers or distances would be skewed to changes in particular journey distance bands. For reasons discussed in Chapter 13, our main focus in analysing the travel diary data in the three towns was on trips of 50km or less.

<sup>3</sup> As previously mentioned, individual years of cycling data can be relatively volatile, which was part of the logic for looking at trends across whole of the 2002-2008 period, and for calculating three year rolling averages. Comparing the period 2002-2004 with 2004-2006 suggests that cycle trips numbers fell, whilst cycle distance may have been broadly constant. However, it is clear that whatever measure is used, there is no evidence for a positive trend in cycling in medium-sized urban areas, unlike the trends in the three towns, which are discussed in Chapters 13 and 15.

### **For commuting**

Between 2004 and 2008, both trips and distance travelled for commuting generally declined (by 13.5% and 8.9% respectively). Possible reasons might include an increase in home working, or a change in the household composition in medium-sized urban areas, though it was beyond the scope of this study to investigate this. Between 2004 and 2008, travel by walking, cycling and bus use also fell – and fell by more than the change in the overall amount of commuting travel. Meanwhile, car driver trips and distance both fell, but by a lesser amount than the overall fall in commuting travel. Hence, the proportion of commuting travel done as a car driver actually increased over the period – from 51.8% to 55.6% of trip stages made and from 67.3% to 69.4% of distance travelled.

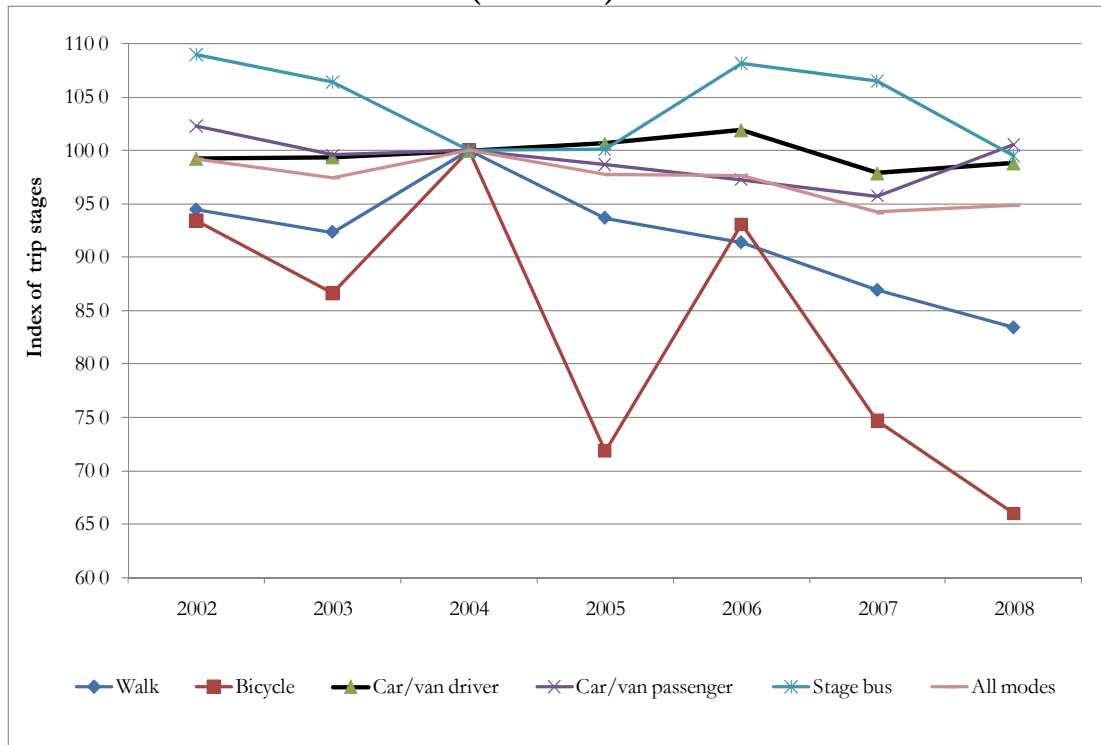
### **For education/escort education**

Between 2004 and 2008, trends in overall travel for education/escort education show trip stages per person per year dropping by 11%. Trip stages by most modes (walking, cycling, car driver, car passenger) show a similar decline, but bus trips may have increased somewhat (although review of trends since 2002 suggests this could be due to anomalously low figures in 2004). The proportion of education/escort education travel as a car passenger fell slightly, from 23.5% to 21.9% of trip stages and from 31.5% to 23.3% of distance travelled<sup>4</sup>. There was also a fall in the proportion of education/escort education travel that was walked (from 47.4% to 45.6% of trip stages and from 14.2% to 13.5% of trip distance). The proportion of travel that was cycled remained roughly constant (at 1.5% of trip stages and 1.0-1.1% of trip distance). There was an apparent increase in the proportion of travel by bus (from 4.1% to 6.7% of trip stages and from 8.4% to 12.8% of trip distance).

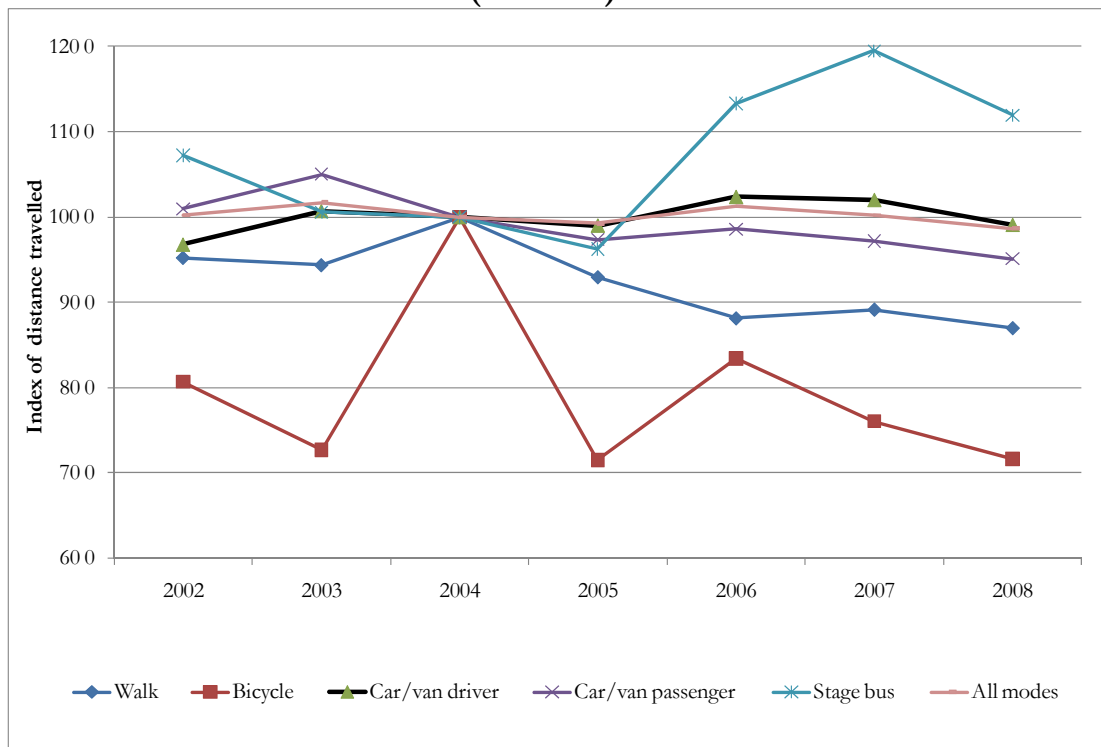
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<sup>4</sup> Car *passenger* travel for education/escort education (rather than car driver travel) provides the closest available comparator to data we will examine in Chapter 12 on travel to school in the three towns.

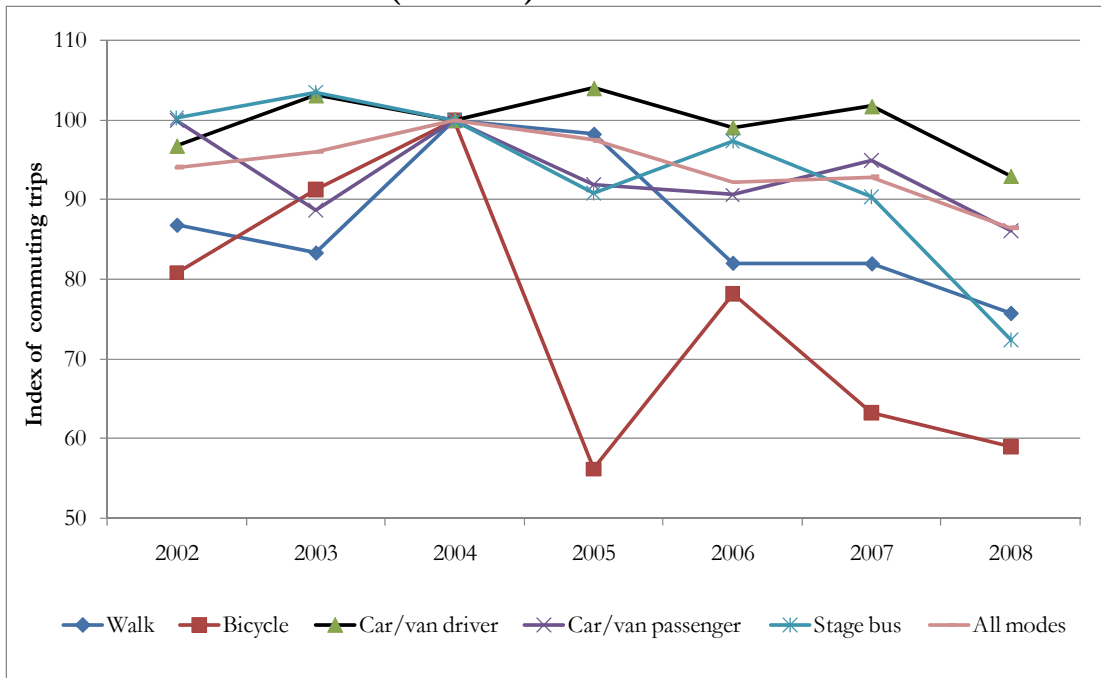
**Figure 10.1: Index of changes in the number of trip stages for all trip purposes, medium-sized urban areas of Great Britain (2004=100)**



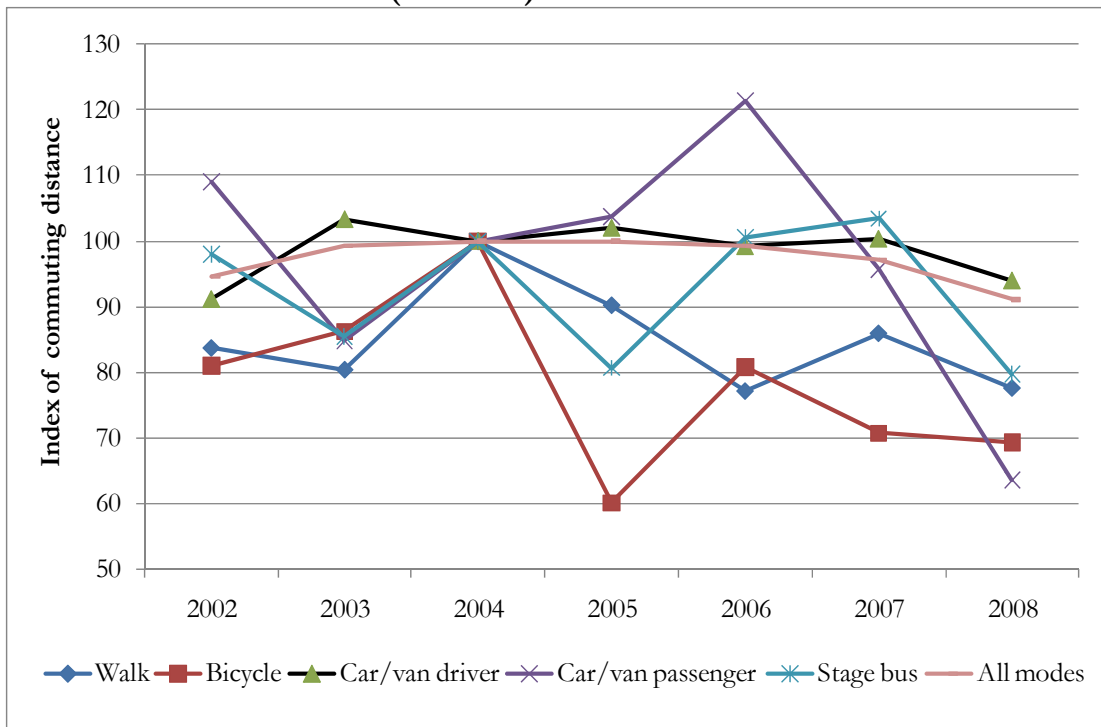
**Figure 10.2: Index of changes in the distance travelled for all trip purposes, medium-sized urban areas of Great Britain (2004=100)**



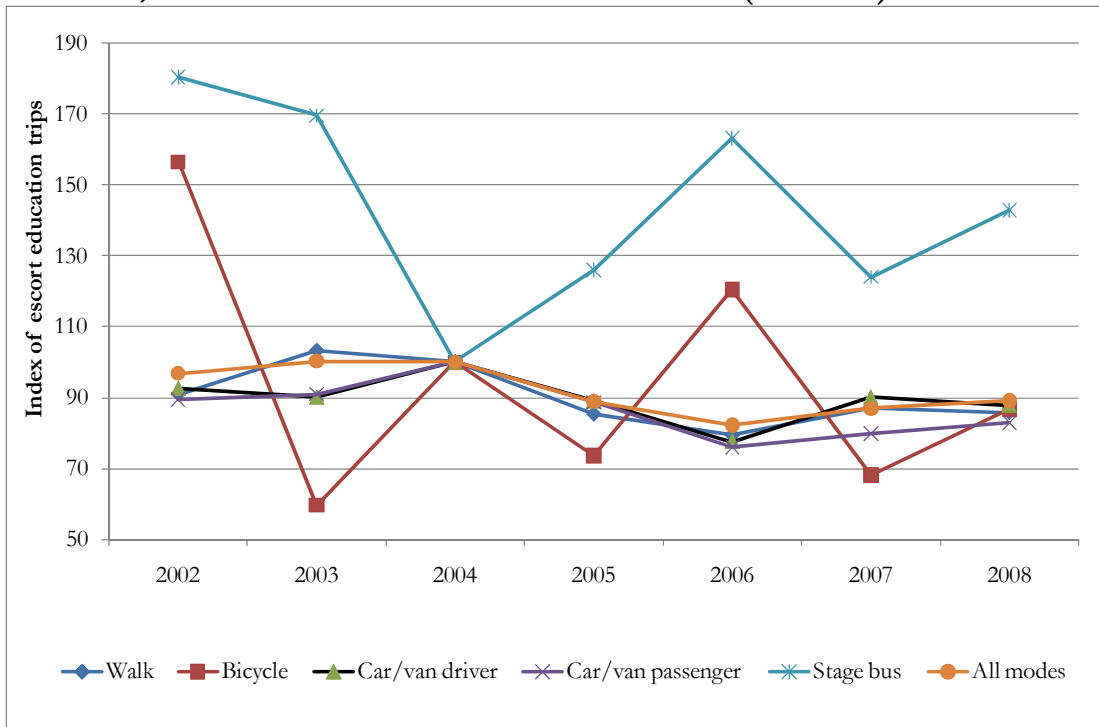
**Figure 10.3: Index of changes in the number of trip stages for commuting, medium-sized urban areas of Great Britain (2004=100)**



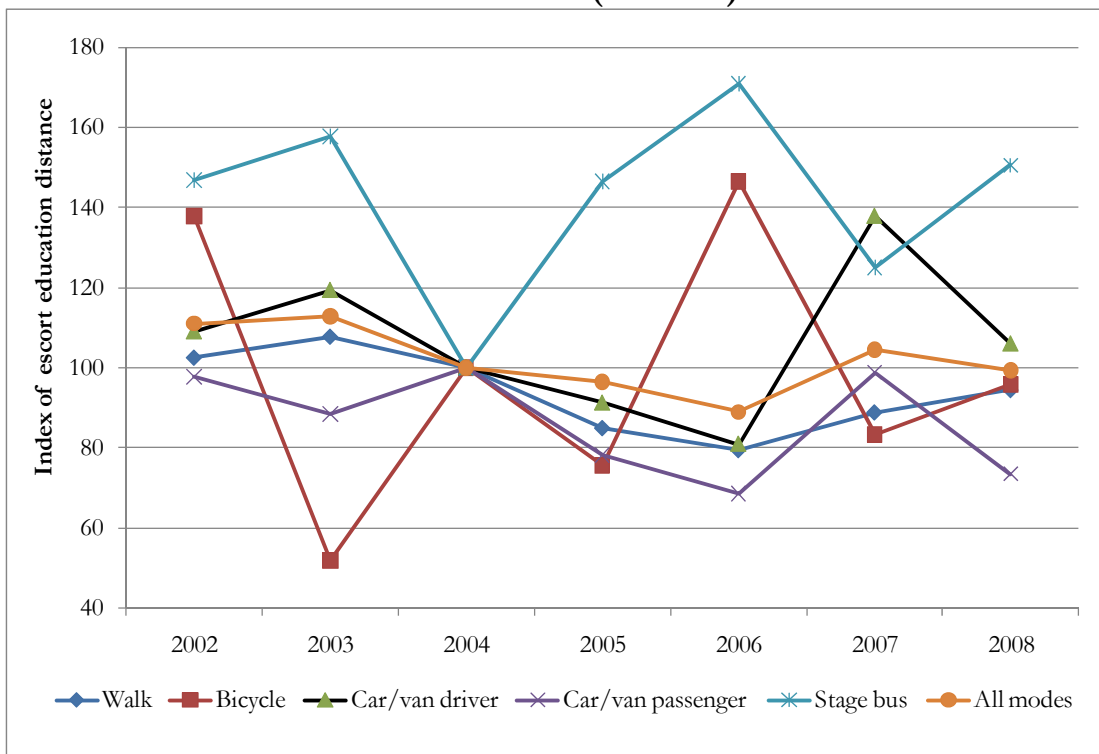
**Figure 10.4: Index of changes in the distance travelled for commuting, medium-sized urban areas of Great Britain (2004=100)**



**Figure 10.5: Index of changes in the number of trip stages for education/escort education, medium-sized urban areas of Great Britain (2004=100)**



**Figure 10.6: Index of changes in the distance travelled for education/escort education, medium-sized urban areas of Great Britain (2004=100)**



**Table 10.1: Trip stages per person per year for all trip purposes, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	Surface Rail	Taxi/minicab	All modes
2002	305	22	446	256	55	11	16	1,131
2003	298	20	446	250	53	11	14	1,111
2004	323	23	449	251	50	13	13	1,140
2005	303	17	452	248	50	14	15	1,114
2006	295	21	458	244	54	13	12	1,114
2007	281	17	439	240	53	14	15	1,074
2008	269	15	444	252	50	16	15	1,081
<b>% change compared with the previous year</b>								
2003	-2.2	-7.3	0.1	-2.6	-2.3	-2.5	-8.2	-1.8
2004	8.3	15.4	0.6	0.4	-6.0	19.6	-8.3	2.6
2005	-6.3	-28.2	0.7	-1.3	0.1	4.9	10.1	-2.2
2006	-2.5	29.6	1.3	-1.4	8.1	-7.7	-15.1	-0.1
2007	-4.9	-19.8	-4.0	-1.6	-1.5	5.6	20.2	-3.5
2008	-4.0	-11.6	1.0	5.0	-6.6	17.8	2.9	0.7
<b>Index compared with 2004</b>								
2002	94.4	93.4	99.3	102.3	109.0	85.8	118.8	99.2
2003	92.4	86.7	99.4	99.6	106.4	83.6	109.1	97.4
2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2005	93.7	71.8	100.7	98.7	100.1	104.9	110.1	97.8
2006	91.4	93.1	101.9	97.3	108.2	96.8	93.5	97.7
2007	86.9	74.7	97.9	95.7	106.5	102.2	112.4	94.2
2008	83.4	66.0	98.8	100.5	99.5	120.4	115.6	94.8

**Table 10.2: Distance travelled per person per year for all trip purposes, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	Surface Rail	Taxi/minicab	All modes
2002	210	42	3483	2065	207	433	54	6,887
2003	209	38	3625	2149	194	351	46	6,993
2004	221	52	3599	2046	193	402	48	6,875
2005	205	37	3563	1992	186	471	61	6,821
2006	195	43	3684	2017	218	414	56	6,961
2007	197	39	3671	1989	230	461	52	6,889
2008	192	37	3566	1946	216	512	53	6,784
<b>% change compared with the previous year</b>								
2003	-0.9	-9.9	4.1	4.1	-6.2	-18.8	-13.9	1.5
2004	6.0	37.6	-0.7	-4.8	-0.5	14.5	3.4	-1.7
2005	-7.0	-28.5	-1.0	-2.6	-3.7	17.0	28.2	-0.8
2006	-5.2	16.6	3.4	1.2	17.6	-12.1	-8.6	2.1
2007	1.2	-8.8	-0.3	-1.4	5.5	11.4	-6.9	-1.0
2008	-2.4	-5.8	-2.8	-2.1	-6.3	10.9	1.6	-1.5
<b>Index compared with 2004</b>								
2002	95.2	80.7	96.8	100.9	107.2	107.6	112.3	100.2
2003	94.4	72.7	100.7	105.0	100.5	87.3	96.7	101.7
2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2005	93.0	71.5	99.0	97.4	96.3	117.0	128.2	99.2
2006	88.1	83.4	102.4	98.6	113.3	102.9	117.2	101.3
2007	89.2	76.1	102.0	97.2	119.5	114.7	109.1	100.2
2008	87.0	71.6	99.1	95.1	111.9	127.2	110.8	98.7



**Table 10.3 Three year banded trip stages per person per year for all trip purposes, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	Surface Rail	Taxi/minicab	All modes
2002-2004	926	65	1341	757	158	35	43	3382
2003-2005	924	60	1347	749	153	38	42	3365
2004-2006	921	61	1359	743	154	40	40	3368
2005-2007	879	55	1349	732	157	41	42	3302
2006-2008	845	53	1341	736	157	43	42	3269
<b>% change compared with the previous year</b>								
2003-2005	-0.2	-7.7	0.4	-1.1	-3.2	8.6	-2.3	-0.5
2004-2006	-0.3	1.7	0.9	-0.8	0.7	5.3	-4.8	0.1
2005-2007	-4.6	-9.8	-0.7	-1.5	1.9	2.5	5.0	-2.0
2006-2008	-3.9	-3.6	-0.6	0.5	0.0	4.9	0.0	-1.0
<b>Index compared with 2002-2004</b>								
2002-2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2003-2005	99.8	92.3	100.4	98.9	96.8	108.6	97.7	99.5
2004-2006	99.5	93.8	101.3	98.2	97.5	114.3	93.0	99.6
2005-2007	94.9	84.6	100.6	96.7	99.4	117.1	97.7	97.6
2006-2008	91.3	81.5	100.0	97.2	99.4	122.9	97.7	96.7

**Table 10.4 Three year banded distance travelled per person per year for all trip purposes, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	Surface Rail	Taxi/minicab	All modes
2002-2004	640	132	10707	6260	594	1186	148	20,755
2003-2005	635	127	10787	6187	573	1224	155	20,689
2004-2006	621	132	10846	6055	597	1287	165	20,657
2005-2007	597	119	10918	5998	634	1346	169	20,671
2006-2008	584	119	10921	5952	664	1387	161	20,634
<b>% change compared with the previous year</b>								
2003-2005	-0.8	-3.8	0.7	-1.2	-3.5	3.2	4.7	-0.3
2004-2006	-2.2	3.9	0.5	-2.1	4.2	5.1	6.5	-0.2
2005-2007	-3.9	-9.8	0.7	-0.9	6.2	4.6	2.4	0.1
2006-2008	-2.2	0.0	0.0	-0.8	4.7	3.0	-4.7	-0.2
<b>Index compared with 2002-2004</b>								
2002-2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2003-2005	99.2	96.2	100.7	98.8	96.5	103.2	104.7	99.7
2004-2006	97.0	100.0	101.3	96.7	100.5	108.5	111.5	99.5
2005-2007	93.3	90.2	102.0	95.8	106.7	113.5	114.2	99.6
2006-2008	91.3	90.2	102.0	95.1	111.8	116.9	108.8	99.4

**Table 10.5: Trip stages per person per year for commuting, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	Surface Rail	Taxi/minicab	<b>All modes</b>	Car/van driver mode share
2002	34.7	7.3	99.7	21.7	10.7	5.5	1.6	<b>187.3</b>	53.2%
2003	33.3	8.3	106.3	19.2	11.1	5.1	1.8	<b>191.2</b>	55.6%
2004	40.0	9.1	103.1	21.7	10.7	6.9	2.0	<b>199.1</b>	51.8%
2005	39.3	5.1	107.2	19.9	9.7	6.7	1.6	<b>194.0</b>	55.3%
2006	32.8	7.1	102.1	19.6	10.4	5.6	1.3	<b>183.5</b>	55.6%
2007	32.8	5.7	104.9	20.6	9.7	6.0	1.0	<b>184.9</b>	56.7%
2008	30.3	5.3	95.8	18.7	7.7	8.0	1.8	<b>172.2</b>	55.6%
<b>% change compared with the previous year</b>									
2003	-4.0	12.9	6.6	-11.3	3.3	-7.5	13.5	<b>2.1</b>	
2004	20.0	9.5	-3.0	12.8	-3.4	36.9	9.6	<b>4.1</b>	
2005	-1.8	-43.8	4.0	-8.1	-9.2	-4.2	-19.5	<b>-2.5</b>	
2006	-16.5	39.1	-4.8	-1.4	7.2	-16.3	-19.7	<b>-5.4</b>	
2007	-0.1	-19.1	2.7	4.7	-7.1	8.2	-19.1	<b>0.7</b>	
2008	-7.6	-6.8	-8.6	-9.2	-19.9	33.4	73.7	<b>-6.9</b>	
<b>Index compared with 2004</b>									
2002	86.8	80.8	96.7	99.9	100.3	79.0	80.4	<b>94.1</b>	
2003	83.3	91.3	103.1	88.7	103.5	73.1	91.2	<b>96.0</b>	
2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>	
2005	98.2	56.2	104.0	91.9	90.8	95.8	80.5	<b>97.5</b>	
2006	82.0	78.2	99.1	90.6	97.4	80.2	64.6	<b>92.2</b>	
2007	82.0	63.3	101.7	94.9	90.4	86.8	52.3	<b>92.9</b>	
2008	75.7	58.9	92.9	86.1	72.4	115.8	90.8	<b>86.5</b>	

**Table 10.6: Distance travelled per person per year for commuting, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	Surface Rail	Taxi/minicab	All modes	Proportion as car/van driver
2002	25.0	16.1	879.1	153.1	48.8	186.0	4.1	<b>1356.1</b>	64.8%
2003	24.0	17.1	996.3	119.2	42.6	137.8	5.3	<b>1423.1</b>	70.0%
2004	29.9	19.9	964.5	140.5	49.8	176.1	6.9	<b>1433.7</b>	67.3%
2005	27.0	11.9	983.6	145.7	40.2	182.2	5.2	<b>1433.5</b>	68.6%
2006	23.1	16.1	956.5	170.5	50.1	158.6	3.7	<b>1423.6</b>	67.2%
2007	25.7	14.1	967.5	134.3	51.5	157.5	3.3	<b>1391.7</b>	69.5%
2008	23.2	13.8	906.3	89.2	39.7	195.0	4.6	<b>1306.1</b>	69.4%
<b>% change compared with the previous year</b>									
2003	-4.0	6.4	13.3	-22.1	-12.7	-25.9	27.6	<b>4.9</b>	
2004	24.4	16.0	-3.2	17.8	17.0	27.8	32.2	<b>0.7</b>	
2005	-9.8	-39.9	2.0	3.7	-19.3	3.5	-24.8	<b>0.0</b>	
2006	-14.5	34.5	-2.8	17.0	24.7	-12.9	-28.7	<b>-0.7</b>	
2007	11.5	-12.5	1.1	-21.2	2.8	-0.7	-10.6	<b>-2.2</b>	
2008	-9.7	-2.0	-6.3	-33.6	-22.9	23.8	37.5	<b>-6.2</b>	
<b>Index compared with 2004</b>									
2002	83.7	81.0	91.1	109.0	98.0	105.6	59.3	<b>94.6</b>	
2003	80.4	86.2	103.3	84.9	85.5	78.2	75.6	<b>99.3</b>	
2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>	
2005	90.2	60.1	102.0	103.7	80.7	103.5	75.2	<b>100.0</b>	
2006	77.1	80.8	99.2	121.4	100.6	90.1	53.6	<b>99.3</b>	
2007	85.9	70.7	100.3	95.6	103.4	89.4	47.9	<b>97.1</b>	
2008	77.6	69.3	94.0	63.5	79.8	110.7	65.9	<b>91.1</b>	

**Table 10.7: Trip stages per person per year for education/escort education, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	All modes	Walk mode share	Bicycle mode share	Car/van driver mode share	Car / van passenger mode share	Bus mode share
2002	54.6	3.0	23.7	26.7	9.3	<b>122.7</b>	44.5%	2.4%	19.3%	21.7%	7.6%
2003	61.9	1.1	23.0	27.1	8.8	<b>127.1</b>	48.7%	0.9%	18.1%	21.3%	6.9%
2004	60.0	1.9	25.6	29.8	5.2	<b>126.7</b>	47.4%	1.5%	20.2%	23.5%	4.1%
2005	51.2	1.4	22.8	26.4	6.5	<b>112.7</b>	45.4%	1.2%	20.2%	23.4%	5.8%
2006	47.6	2.3	19.8	22.6	8.5	<b>104.2</b>	45.7%	2.2%	19.0%	21.7%	8.1%
2007	52.4	1.3	23.0	23.8	6.4	<b>110.2</b>	47.5%	1.2%	20.9%	21.6%	5.8%
2008	51.5	1.6	22.5	24.7	7.4	<b>113.0</b>	45.5%	1.5%	19.9%	21.9%	6.5%
<b>% change compared with the previous year</b>											
2003	13.4	-61.8	-2.7	1.7	-6.0	<b>3.6</b>					
2004	-3.1	67.5	10.9	9.8	-41.0	<b>-0.3</b>					
2005	-14.7	-26.3	-10.9	-11.3	26.0	<b>-11.0</b>					
2006	-7.0	63.3	-12.9	-14.3	29.6	<b>-7.6</b>					
2007	10.0	-43.4	16.1	5.2	-24.0	<b>5.7</b>					
2008	-1.7	27.3	-2.5	3.9	15.1	<b>2.6</b>					
<b>Index compared with 2004</b>											
2002	90.9	156.4	92.6	89.5	180.4	<b>96.8</b>					
2003	103.1	59.7	90.2	91.0	169.6	<b>100.3</b>					
2004	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>					
2005	85.3	73.7	89.1	88.7	126.0	<b>89.0</b>					
2006	79.3	120.4	77.6	76.0	163.3	<b>82.2</b>					
2007	87.3	68.1	90.1	80.0	124.1	<b>86.9</b>					
2008	85.8	86.7	87.9	83.1	142.8	<b>89.2</b>					

**Table 10.8: Distance travelled per person per year for education/escort education, medium-sized urban areas of Great Britain**

	Walk	Bicycle	Car/van driver	Car/van passenger	Stage bus	All modes	Proportion as walk	Proportion as bicycle	Proportion as car/van driver	Proportion as car/van passenger	Proportion as bus
2002	38.8	3.9	81.5	81.9	32.9	<b>295.5</b>	13.1%	1.3%	27.6%	27.7%	11.1%
2003	40.7	1.5	89.2	74.0	35.4	<b>300.0</b>	13.6%	0.5%	29.7%	24.7%	11.8%
2004	37.8	2.8	74.8	83.8	22.4	<b>266.2</b>	14.2%	1.1%	28.1%	31.5%	8.4%
2005	32.1	2.1	68.2	65.5	32.8	<b>256.9</b>	12.5%	0.8%	26.5%	25.5%	12.8%
2006	30.1	4.2	60.4	57.3	38.3	<b>236.7</b>	12.7%	1.8%	25.5%	24.2%	16.2%
2007	33.6	2.4	103.1	82.8	28.0	<b>278.1</b>	12.1%	0.9%	37.1%	29.8%	10.1%
2008	35.7	2.7	79.2	61.5	33.7	<b>264.3</b>	13.5%	1.0%	30.0%	23.3%	12.8%
<b>% change compared with the previous year</b>											
2003	5.1	-62.5	9.5	-9.6	7.5	<b>1.5</b>					
2004	-7.1	93.2	-16.2	13.2	-36.6	<b>-11.3</b>					
2005	-15.1	-24.4	-8.9	-21.8	46.4	<b>-3.5</b>					
2006	-6.4	93.7	-11.3	-12.5	16.6	<b>-7.9</b>					
2007	11.8	-43.1	70.6	44.4	-26.8	<b>17.5</b>					
2008	6.2	14.9	-23.2	-25.7	20.4	<b>-5.0</b>					
<b>Index compared with 2004</b>											
2002	102.4	137.9	109.0	97.7	146.7	<b>111.0</b>					
2003	107.7	51.8	119.3	88.3	157.8	<b>112.7</b>					
2004	100.0	100.0	100.0	100.0	100.0	<b>100.0</b>					
2005	84.9	75.6	91.1	78.2	146.4	<b>96.5</b>					
2006	79.5	146.4	80.8	68.4	170.8	<b>88.9</b>					
2007	88.8	83.3	137.9	98.8	125.0	<b>104.5</b>					
2008	94.4	95.7	105.9	73.4	150.5	<b>99.3</b>					

## 10.3 National Road Traffic Estimates

### 10.3.1 Background to NRTE data

Each year, the Department for Transport estimates the total activity of traffic (i.e. the number of vehicle kilometres travelled) on the road network in Great Britain. This estimate is calculated as a function of the length of the road network (kilometres) and the traffic flow (number of vehicles). The traffic flow component uses information from both manual and automatic counts, as discussed below<sup>5</sup>. Estimates of changes in both annual and quarterly flows are produced<sup>6</sup>.

The primary source of data is the manual counts. The Department for Transport carries out around 10,000 manual counts each year - approximately 5,000 counts on major roads and 5,000 counts on minor roads, with each count taking place for 12 hours between 7am and 7pm. Categories of vehicle recorded include 'all motorised vehicles', 'cars and taxis' and 'pedal cycles'.

These counts are scheduled to take place on weekdays, but not on or near to public holidays or school holidays. To minimise the effects of possible seasonal factors, counting is confined to the so-called 'neutral weeks'. These are, namely, most weeks in March, April, May, June, September and October. With counts being between 7am and 7pm, no information is provided about traffic at night, at weekends, over public holiday periods, or in the seven non-neutral months. Therefore, a set of 244 automatic counters, which count traffic 24 hours a day throughout the year, are used to convert the 12 hour counts into estimated 24 hour counts averaged over the year. The quarterly data are also produced using data from the automatic traffic counters, constrained or calibrated to the annual traffic estimates.

Manual counts operate somewhat differently for major and minor roads.

#### Major roads

The major road network (all motorways and 'A' roads) is divided up into around 17,000 links, where each link is a section of major road joining two major road junctions. Each link has a counting location attached to it. A link may also end or start at a local authority boundary.

Each link is counted at regular intervals, varying between every year and every eight years, depending on the level of traffic and its variability. This methodology allows for complete coverage of the major roads network over an eight year period.

It is recognised that, with the exception of motorways, traffic levels will vary along the length of a link. However, the procedure of counting at a statistically random point on each link can be expected to lead to good estimates at national level, although estimates on some individual links may be less reliable.

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<sup>5</sup> Further information on the methodology that the Department for Transport uses to estimate traffic is given at: <http://www.dft.gov.uk/pgr/statistics/datatablespublications/roadtraffic/notesdefinitions/nattraffestimatesmade.pdf>

<sup>6</sup> Changes in the volume of pedal cycles are not estimated on a quarterly basis, because there are concerns that the bicycle information from the automatic traffic counters is relatively inaccurate, due to bikes diverting around the counting equipment, or being on the footpath etc.. For both sets of manual counts, those undertaking the surveys are carefully instructed to count all bikes using the link, whether on the road or on the footway.

### Minor roads

Due to the size of the minor roads network, complete coverage is not feasible for the Department for Transport. Therefore, minor roads are split into one of six road categories: B class (urban and rural), C class (urban and rural) and Unclassified roads (urban and rural). An attempt is then made to measure the average flow on each of these road types by carrying out a number of counts along them. A random sample of 4,700 sites across Great Britain are visited each year, with the same sites counted each year on the same date of the same week. (In 2008 and 2009, the Department for Transport undertook, in total, an additional 10,000 minor road manual counts as part of its benchmarking exercise.)

### 10.3.2 Data analysed for this project

The raw 12 hour count data from the relevant major and minor road count sites was obtained for the three towns, and this is analysed in Chapter 17<sup>7</sup>.

In order to put the observed trends in the towns into context, we also considered the data about trends on urban roads – which the Department reports separately for ‘A-roads’ and ‘minor roads’<sup>8</sup>. We examined indices of the total volume of traffic for all motorised vehicles, and specifically for cars and taxis, for urban A-roads, urban minor roads and all urban roads, looking at annual data from 1998, and quarterly data from Q2 2003 onwards. The results are given in Figures 10.7 and 10.8. A summary of the changes is given in Tables 10.7 and 10.8.

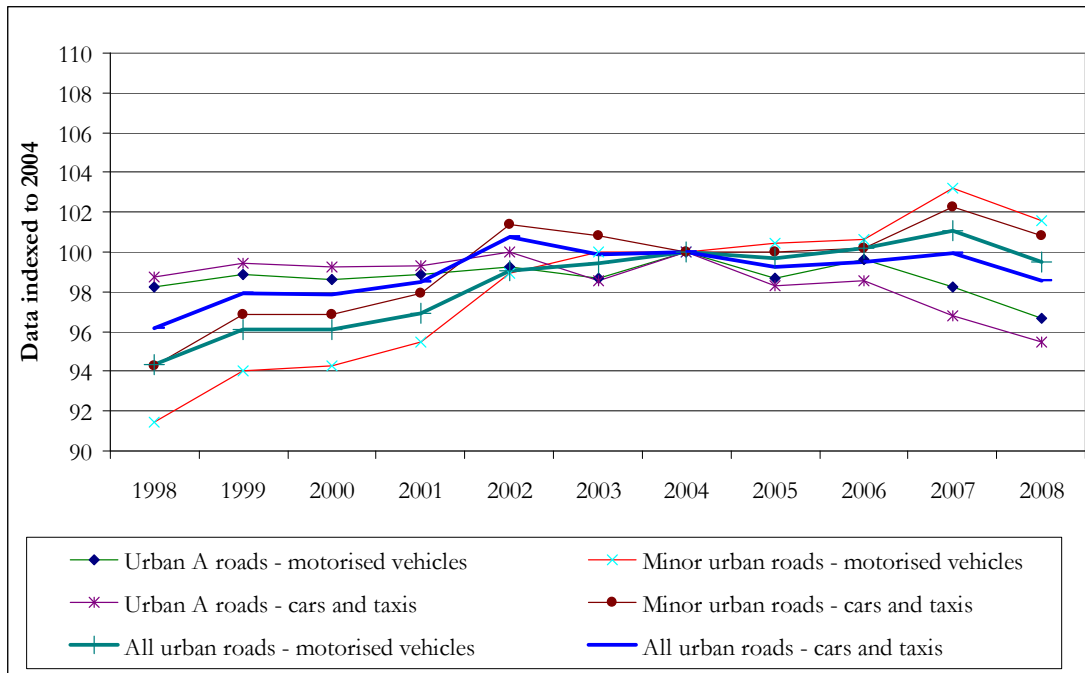
From the graphs, we may see that overall urban traffic levels were relatively stable from the beginning of the Sustainable Travel Towns period until Q4 2006. Between Q4 2006 and Q3 2007, traffic levels rose. They then fell between Q3 2007 and Q4 2007; remained stable for the next three quarterly periods; fell again in Q4 2008; and remained at the lower level for the next three quarters, presumably due to the changes in the economic situation. It is also apparent from inspection of the graphs that there has been a difference in the trend for traffic on major and minor roads, with the decline in traffic on major roads starting somewhat earlier than on minor roads.

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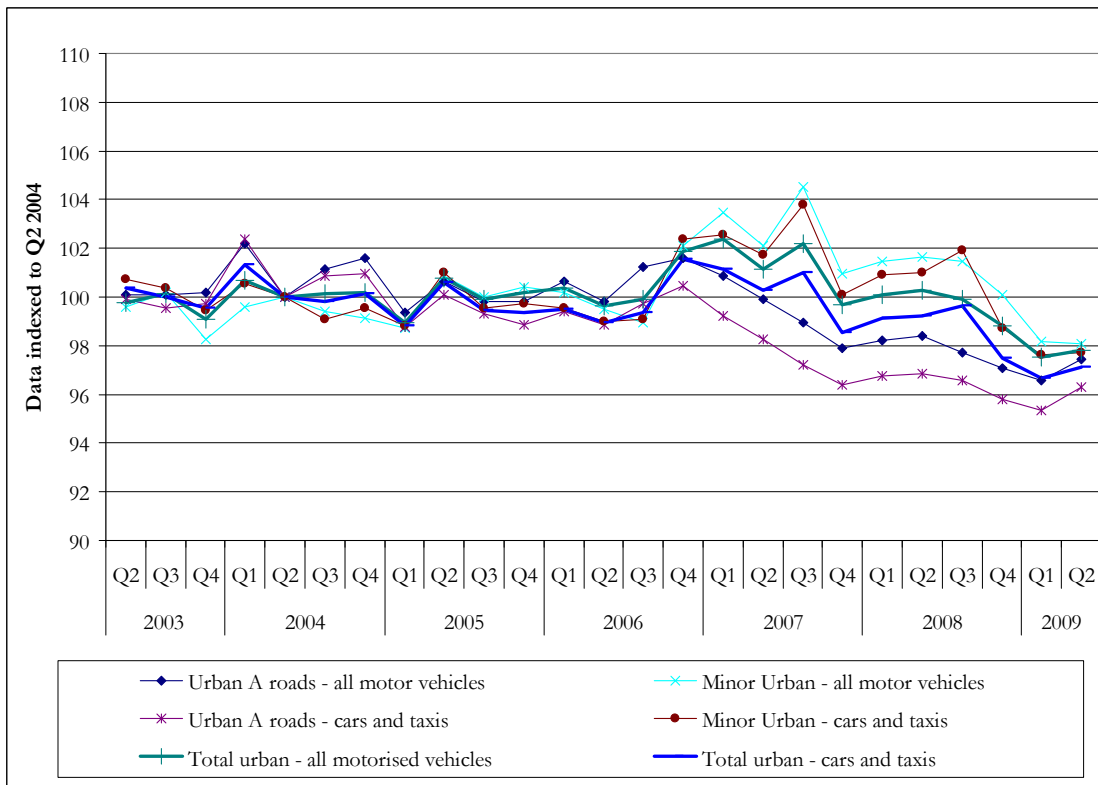
<sup>7</sup> The adjusted data set, generated by using information from the automatic traffic counters, was not used, given the danger that the specific changes we were trying to detect in the towns might effectively have been ‘adjusted away’, since the underlying hypothesis being tested is that changes in the three towns have been different from those observed elsewhere.

<sup>8</sup> An urban road is defined as ‘a road which falls within an urban settlement boundary with a population of 10,000 people or more, as defined by the 2001 Census of population’.

**Figure 10.7: Changes in traffic on urban roads in Great Britain, 1998-2008 (2004=100)**



**Figure 10.8: Changes in traffic on urban roads in Great Britain, Q2, 2003 to Q2, 2009 (Q2 2004=100)**





From the summary table for annual data (Table 10.9) it appears that ‘all motor vehicle’ traffic in Great Britain outside London remained roughly constant between 2004 and 2008. Car traffic in Great Britain outside London changed by **-1.0%**. This is very similar to the recorded fall in car driver distance from National Travel Survey data for medium-sized urban areas of -0.9% (reported in 10.2.2, above).

**Table 10.9: Changes in annual traffic in relation to the period of the Sustainable Travel Towns work, Great Britain**

	Road type	Change 2004-2008: GB	Change 2004-2008: GB excluding London
All motorised vehicles	Urban A-roads	-3.3%	-3.1%
	Minor urban roads	+1.6%	+1.8%
	All urban roads	-0.5%	-0.2%
Cars and taxis	Urban A-roads	-4.5%	-4.0%
	Minor urban roads	+0.8%	+1.0%
	All urban roads	-1.4%	-1.0%

The table of quarterly data (Table 10.10) gives some further insights into national changes in urban traffic over the Sustainable Travel Town period. Unfortunately, it was not possible to obtain quarterly data excluding London, and so the figures in Table 10.10 are for urban roads in Britain including London. This means that any reductions in traffic are of greater magnitude than for urban areas outside London. With this caveat in mind, Table 10.10 gives us various benchmarks against which data sets for the three towns may be compared, as follows:

- For the household survey data (reported in Chapter 13), which was collected between September and mid-November in 2004 and 2008, the best available comparator is the average of the change in national urban car traffic between 2004 and 2008, in Q3 and Q4. This is **-1.4%** (but note that this is likely to overstate the reduction in traffic in urban areas outside London, as explained above).
- For the automatic traffic count data (reported in Chapter 17), the best available comparator is the change in national urban ‘all vehicle’ traffic between 2004/05 and 2008/09, for all urban roads. This is **-0.7%** (again, likely to be an overestimate for urban areas outside London).
- For the manual count data (reported in Chapter 17), which was generally collected in the period May-October, the best available comparator is the average change in national urban car traffic between 2004 and 2008, in Q2 and Q3. This is **-0.5%** (again, an overestimate for areas outside London).

Against this national backdrop, we turn now to examine the changes in travel patterns in the three Sustainable Travel Towns.

**Table 10.10: Quarterly changes in traffic on urban roads in Great Britain in relation to the period of the Sustainable Travel Town work**

	Road type	Change Q1 2004 to Q1 2008	Change Q2 2004 to Q2 2008	Change Q3 2004 to Q3 2008	Change Q4 2004 to Q4 2008	Change Q1 2005 to Q1 2009	Change Q2 2004 to Q2 2009	average of Q2 / Q3 2004 and 2008	average of Q3 / Q4 2004 and 2008	2004/05 to 2008/09: average of relevant quarterly data	2004 to 2008: average of relevant quarterly data
All motorised vehicles	Urban A-roads	-3.9%	-1.6%	-3.3%	-4.4%	-2.8%	-2.6%	-2.5%	-3.9%	-3.0%	-3.3%
	Minor urban roads	+1.9%	+1.6%	+2.0%	+0.9%	-0.5%	-1.9%	+1.8%	+1.5%	+1.0%	+1.6%
	All urban roads	-0.6%	+0.3%	-0.2%	-1.4%	-1.4%	-2.2%	0.0%	-0.8%	-0.7%	-0.5%
Cars and taxis	Urban A-roads	-5.5%	-3.2%	-4.3%	-5.1%	-3.5%	-3.7%	-3.7%	-4.7%	-4.0%	-4.5%
	Minor urban roads	+0.4%	+1.0%	+2.8%	-0.8%	-1.1%	-2.3%	+1.9%	+1.0%	+0.5%	+0.9%
	All urban roads	-2.1%	-0.8%	-0.2%	-2.6%	-2.1%	-2.9%	-0.5%	-1.4%	-1.4%	-1.4%