

16. Walking

16.1 Introduction

This chapter reviews the data about walking in the three towns, which were gathered from on-street manual counts. In Darlington, counts were undertaken several times a year at a town centre cordon. In Peterborough, manual counts were undertaken annually, at sites across the city. There were no manual counts of walking in Worcester. More detail about the data sets is given in each of the sections below. There was a considerable amount of correspondence with the towns, to ensure that the data provided were accurate, and to understand changes in the data collection over time. Inevitably, analysis is limited by the nature of the information available.

In this chapter, information about Darlington is presented first, followed by information about Peterborough. In each case, the tables and graphics that inform the analysis are given at the end of the relevant section. The approach taken has involved looking at both changes overall, and changes recorded at individual count sites. Both year-on-year changes, and changes in relation to a 2004/5 baseline have been calculated. (Whilst there is a case for using 2003/4 as the baseline year, rather than 2004/5, there are a number of data sets where information was not available for 2003/4, and so 2004/5 was adopted to ensure consistency throughout.) Where possible, changes since 2004/5 are placed in the context of longer-term, historic trends. Key headline results have been tested for statistical significance.

Given the prominence of the personal travel planning activities in the towns' programmes, analysis has been undertaken to try to discern specific effects from this work. This has involved geographically matching data from count sites with the relevant phases of work, and then looking at both changes over time, and also comparing changes at personal travel planning locations with changes elsewhere. Inevitably, this was an imperfect process, not least since the walking counts were not collected with the intention of assessing the personal travel planning effects, and therefore both the timing and location of the counts were not ideal for this purpose.

The results from the analysis are compared briefly with the results from the household travel surveys (as already discussed in Chapter 13). Section 16.4 draws together the walking results from all three towns.

16.2 Darlington walk data

16.2.1 Introduction

This section discusses the data available from Darlington's manual counts. It is important to note that these counts were very geographically specific – i.e. they formed a cordon around the town centre. The key results and conclusions are summarised in section 16.2.5.

16.2.2 Nature of the data

Darlington had undertaken 12-hour (7am to 7pm) manual counts of pedestrians at a cordon of points around the city centre since 2000. Initially counts were only undertaken once a year (in June/July). Since April 2006, they had been undertaken four times a year (in January, April, July and October) and had taken place at 12 locations. A map of the count locations is given in Figure 16.1. The aim was that the town centre was sealed – i.e. pedestrians were counted at all crossing points of the river or ring road into the town centre. In relation to individual counts, the following points should be noted:

- In April 2006, the counts were undertaken by an external contractor. Darlington was unhappy with the quality of the data collection, and subsequently moved to using agency staff, which it managed. The figures for this count should therefore be treated with caution.
- In July 2006, an extra site was added (Site 9), following the introduction of a new pedestrian crossing near Sainsburys. Previously, Sites 8 and 10 should have been capturing the majority of pedestrians crossing at this point. (A few people might have ventured to cross the dual carriageway before then, but the numbers would have been negligible.)
- In July 2006, 15-hour counts were undertaken (rather than 12-hour counts) to assess whether this would substantially alter the figures. In practice, only 1,762 pedestrians were counted in the additional three hours (compared with a total 15-hour count of 33,290). In our tables, the totals used are the 12-hour figures (which have been extracted from the raw data).
- Site 12 – Duke Street – was a very busy site, and was consequently counted by two surveyors (with results combined). In 2007, a college located on this route closed (which had previously generated significant flows of students into the town at lunchtime).
- There is some confusion over the results for Site 11, which dropped down substantially between the counts in June 2005 and April 2006. In theory, there was a small change in the count site location only at this time (a move of about 50 metres, which was partly introduced to pick up *additional* pedestrians on Northumberland Street). Residents' parking was also introduced on one of the feeder routes, which may have reduced pedestrian flows, as people could no longer park there to walk into town. However, the council argued that neither of these changes was adequate to account for the observed reduction in flows (of over 3,000 pedestrians per day). Consequently, their surmise was that the external contractor used to monitor this site might have been counting in a different location to that intended prior to 2006 (for example, further out of the town on that route).

In our analysis, for comparing recent data with that from earlier years, a 'false June' has been created for 2006 onwards. This has involved interpolating data between the April and July counts in that year, and assuming that there was a linear trend between the two data points.

We have also created our own set of total figures, which exclude the results from Site 11, given the confusion over its specification.

In relation to all of the walking data, it should be noted that counts may have been positively or negatively affected by the weather conditions. Unfortunately, there is no available information about prevailing conditions for the counts discussed here.

A full table of the raw data used is given in Table 16.6 at the end of section 16.2.

16.2.3 Data presentation

The following data are presented after section 16.5:

- Table 16.2 – a table of the changes recorded at the individual count sites using quarterly data collected since April 2006, together with a calculation of the % change compared with the relevant quarter in the preceding year, and an index of the data compared with the data for the relevant first quarter for which information is available;
- Table 16.3 – a table of the changes at the individual count sites according to the June data (including the ‘false June’ data), together with a calculation of the % change compared with the preceding year, and an index of the data compared with the data for 2004;
- Figure 16.2 – a graph showing the change in the cordon total figures for June/false June over time;
- Figure 16.3 – a graph showing the cordon totals since April 2006;
- Figure 16.4 – a graph showing the changes at the individual count sites using the June/false June figures over time;
- Figure 16.5 – a graph showing an index of the changes at the individual count sites using the June/false June figures over time;
- Figure 16.6 – a graph showing the changes at the individual count sites using the actual data over time;
- Table 16.4 – a table giving relevant count totals for different personal travel planning periods and how these changed over time;
- Table 16.5 – a table providing a summary of the household survey results;
- Figure 16.7 – a graph giving an index of the change in walking, as recorded by the manual count data, and the household survey data.

16.2.4 Data analysis

Overall effects on walking

According to the two different sets of total figures (given in Table 16.3), between 2004 and 2009, there was an increase in walking at the town centre cordon of 25-43%. The higher figure is probably the more accurate, since it excludes data from Site 11, where there was a large unexplained drop in recorded flows. A one-tailed paired sample T-test, performed on the data for Sites 1-7 and 12, comparing data from June 2004 with ‘June’ 2009 gives a p-value of 0.023, indicating that this growth is statistically significant, at the 95% confidence level.

As shown in Figure 16.2, prior to 2004, walking into the town centre appears to have been falling. After 2004, walking levels changed over time as follows:

- Between 2004 and 2005, there was an overall increase of 21-23%. Moreover, pedestrian flows at all count sites except 2 and 4 increased (and the changes at Sites 2 and 4 may simply reflect route substitution, since the increases at Sites 1, 3 and 5 were particularly substantial).
- Between 2005 and 2006, there was a further increase of 4-20%. Flows at all count sites increased, except those recorded at Sites 10 and 11, though this may be because the introduction of Site 9 (and the associated new crossing) reduced flows at Site 10, whilst, meanwhile, the location of Site 11 changed.
- Between 2006 and 2007, there was relatively little change.
- Between 2007 and 2008, there was a small increase of about 4%.
- Between 2008 and 2009, there was a small decline of 6-7%.

Analysis of the quarterly data (Table 16.2 and Figure 16.3) suggests that the growth between 2007 and 2008 was largely a spring/summer effect.

In explaining what caused the observed growth in walking levels over the whole period, it should be noted that the pedestrianisation of the town centre took place between summer 2005 and summer 2007. Hence, the pedestrianisation does *not* explain the growth that took place between 2004 and 2006, since the improvements were not in place by that time. (In July 2006, the town centre was, effectively, still a building site.)

In considering other causes that could account for the growth in walking, it does not seem plausible that the workplace travel interventions, the school travel planning or the work to promote public transport would have led to an increase in walking into the city centre. The workplace travel initiatives were of insufficient scale; the school travel initiatives mainly seem to have increased cycling rather than walking; and the promotion of public transport did not increase bus use (between 2004 and 2006), and hence it seems highly unlikely that it would have increased walking to bus stops (though it is possible that, conversely, some people swapped from bus to walk given dissatisfaction with the services). Darlington had relatively few initiatives designed specifically to market and promote walking (as described in Chapter 8), and again, it does not seem plausible that these were of sufficient scale to have led to a significant increase in walking into the town centre.

This leaves two possibilities: first, that the personal travel planning programme stimulated an increase in walking amongst people who lived within a reasonable walking distance of the town centre; and second, that the overall travel awareness campaigning persuaded more people to walk into the city centre. The effects of the personal travel planning work are discussed specifically below, following a brief discussion of the geographical location of any growth.

Trends in walking at different locations

Looking at the individual count data, all count sites recorded an increase in flows between 2004 and 2009, except Site 11 (which might be due to a change of location) and Site 12 (where, for that particular period, there was a decline of 6%, though the overall trend – as shown in Figures 16.4, 16.5 and 16.6 - is one of variability, rather than decline, and, as already discussed, it was thought that the closure of a college on this route was likely to have led to a reduction in flows). The increase at Site 1 (located in the north-west corner of the town centre) appears to have been particularly substantial.

Assessment of personal travel planning effects

Table 16.1 indicates the count sites and timing that are of most relevance to the personal travel planning work. Meanwhile, Table 16.4 provides analysis of relevant groups of counts, over the relevant time periods.

Table 16.1: Relating Darlington walking count sites to personal travel planning work

Personal travel planning phase	Potentially relevant count sites	Timing when change should be evident
1 (Apr-Aug 05)	(11), 12, 1, 2, 3	Jun-04 to Jun-06
2 (Apr-Sep 06)	All, particularly 1, 2, 3, 4, 5, 12	Jun-05 to Jun-07
3 (May-Sep 07)	(4, 5), 6, 7, 8, 9, 10, (11)	Oct-06: Apr 07 compared with Oct-07: Apr-08

This analysis suggests little geographically specific effect from the first two phases of the personal travel planning. However, it is possible that the third phase of this work (conducted in the summer of 2007) did have an effect, since comparing three counts undertaken immediately before the work, with three counts undertaken afterwards, suggests that pedestrian flows into the town centre from the south (i.e. from the personal travel planning target area) increased, whilst those from the north declined slightly, though the pattern for individual sites was variable, and not clear cut.

Comparison with the household travel survey data

Evidence from the household travel surveys is given in Table 16.5. This shows the change in town-wide walking trips, and in walking trips in areas targeted by personal travel planning.

The broad picture that emerges from this data is that:

- walking trips increased by 11-13%;
- walking distance increased by 15-20%;
- the majority of the increase in walking took place between 2005 and 2006;
- in Phase 2 of the personal travel planning work, there appears to have been a more substantial increase in walking in the target area than in the control area.

In relating this to the findings reported above, the following observations can be made.

First, it seems plausible that walk trips into the town centre grew more (25-43%) than town-wide walk trips (11-13%).

Next, as shown in Figure 16.7, the data about the timings of changes show some similarities and some differences, offering possible clues as to the reasons why walking increased.

Between 2004 and 2005, the town centre count data show a significant increase, which is not evident in the household survey data. It is unlikely that this is attributable to the first phase of personal travel planning, since the household survey suggests there was little increase in walking in the Phase 1 personal travel planning area, and the count sites closest to the Phase 1 area show less walking growth than those further away during this period. This implies that there may have been some specific factor encouraging walking

into the town centre at that time, which did not encourage residents to walk more generally.

Between 2005 and 2006, the town centre count data again show significant growth. This is also evident from the household survey data. This period coincided with the second phase of personal travel planning, which the interim household survey suggested resulted in a 25% increase in walking. However, over the same period, walking in a control area (in fact, the Phase 3 personal travel planning area) also increased, by 10%. The town centre count data shows increases at nearly all counters, consistent with a combined effect from Phase 2 of personal travel planning and other, perhaps town-wide, activity. Geographically, the Phase 2 area was the most centrally located, so it is plausible that this is where personal travel planning was most likely to have stimulated walking.

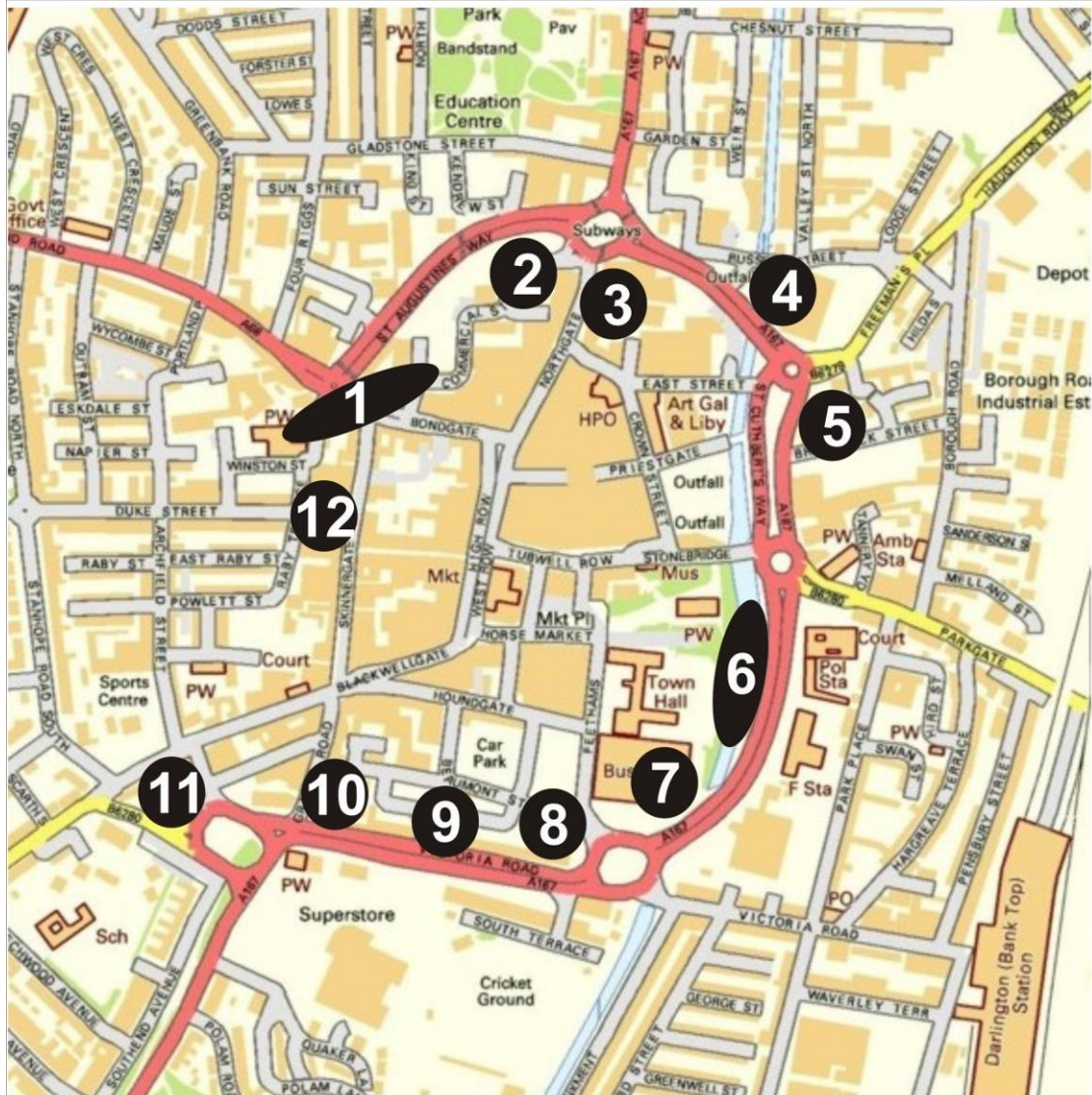
Between 2006 and 2007, the town centre count data show little change overall, but counts increased at sites close to the Phase 3 area and decreased elsewhere. The household survey does not show an increase in walking in the Phase 3 area – in fact, the reverse. However, it is plausible that whilst the personal travel planning work did stimulate a limited amount of walking (into the newly pedestrianised Darlington centre) from residents in the Phase 3 area living close to the central area, there was little change in other walking trips, or trips by residents living further away, with the result that the increase was too small to show up in the household travel survey results.

16.2.5 Summary and conclusions about walking in Darlington

Key conclusions are as follows:

- At the 95% confidence level, there was a statistically significant increase in walking levels into the town centre of Darlington between 2004 and 2009 of between 25% and 43% (c.f. Figure 16.2). The higher figure is probably more accurate. Previously to this, it appears, walking levels into the centre were declining. Meanwhile, in terms of walking throughout Darlington, the household travel surveys show a general increase in walk trips of 11-13%, and an increase in walk distance of 15-20%.
- Most of the growth took place between 2004 and 2006, although there may have also been some further increase in the spring/summer of 2008. Both data sets show significant growth between 2005 and 2006 (c.f. Figure 16.7).
- Growth occurred in all town centre locations, though with particularly strong growth from the north-west. Phase 2 of the personal travel planning (which was focused on the central households) may have been particularly effective at increasing walking, and there may also have been increases in walking into the town centre from the south, prompted by the third phase of personal travel planning.
- While part of the growth in walking into the town centre may be attributed to the personal travel planning work, this does not account for the whole of the walking growth. It is possible that the general travel awareness campaigns (*Town on the Move* and *Local Motion*) were a cause of the early growth (2004-2005) and also the later growth in non-personal travel planning areas. The pedestrianisation would not account for the growth given that the main increase in walking occurred prior to its completion.

Figure 16.1: Map of the walking count sites in Darlington



1. Bondgate subway & Upper Bondgate entering Town Centre
2. St. Augustines way Subway
3. Northgate subway
4. St Augustins Way Toucan Crossing
5. St Cuthberts Way Pelican Crossing (Nr Priestgate)
6. St Cuthberts Way Pelican & Crossing (opp Police & Fire Station)
7. St Cuthberts Way Pelican crossing (rear of bus station)
8. Victoria Road (Nr Feethams)
9. Victoria Road (Nr Sainsburys entrance)
10. Victoria Road (Nr Blockbuster)
11. West Street (monitoring Coniscliffe Road & Northumberland Street)
12. Duke Street (walkway Nr estate agents)

Table 16.2: Changes in walking counts at individual sites in Darlington using quarterly data collected since April 2006

	1	2	3	4	5	6	7	8	9	10	11	12	Total
Apr-06	5072	2084	3398	999	2006	2240	866	2346		2325	2141	9957	33434
Jul-06	3375	2215	4136	1298	1860	3503	1025	1053	2640	1793	2099	6531	31528
Oct-06	4232	3247	2959	1050	2524	2622	972	732	2035	1767	2034	9806	33980
Jan-07	4450	2873	2941	1053	2213	1916	785	807	2314	1907	1518	7104	29881
Apr-07	5065	3054	3444	877	2325	2323	758	843	2355	2356	2161	7146	32707
Jul-07	5400	3397	3730	1246	1728	2903	1103	705	2523	2335	1587	5381	32038
Oct-07	5403	2652	2598	1491	2433	2978	920	688	2451	2145	1446	8847	34052
Jan-08	2166	2807	2380	1428	2334	1843	872	798	2220	2562	1964	4458	25832
Apr-08	4661	3206	1614	3170	2316	2934	956	906	2236	2150	2383	8482	35014
Jul-08	4976	3458	3935	1249	1660	2904	1237	1222	2594	1596	1758	6436	33025
Oct-08	2993	5245	3223	1635	1832	3089	1094	793	2785	2072	2066	7576	34403
Jan-09	2890	2667	2891	1479	1895	2865	656	740	2206	2058	1575	8419	30341
Apr-09	4824	3041	3336	1534	2199	2896	849	851	2525	1935	1067	8017	33074
Jul-09	3435	3085	3327	1591	1552	3051	1054	741	2829	2052	2012	5816	30545
% change compared with relevant quarter in the previous year													
Apr-07	-0.1	46.5	1.4	-12.2	15.9	3.7	-12.5	-64.1		1.3	0.9	-28.2	-2.2
Jul-07	60.0	53.4	-9.8	-4.0	-7.1	-17.1	7.6	-33.0	-4.4	30.2	-24.4	-17.6	1.6
Oct-07	27.7	-18.3	-12.2	42.0	-3.6	13.6	-5.3	-6.0	20.4	21.4	-28.9	-9.8	0.2
Jan-08	-51.3	-2.3	-19.1	35.6	5.5	-3.8	11.1	-1.1	-4.1	34.3	29.4	-37.2	-13.6
Apr-08	-8.0	5.0	-53.1	261.5	-0.4	26.3	26.1	7.5	-5.1	-8.7	10.3	18.7	7.1
Jul-08	-7.9	1.8	5.5	0.2	-3.9	0.0	12.1	73.3	2.8	-31.6	10.8	19.6	3.1
Oct-08	-44.6	97.8	24.1	9.7	-24.7	3.7	18.9	15.3	13.6	-3.4	42.9	-14.4	1.0
Jan-09	33.4	-5.0	21.5	3.6	-18.8	55.5	-24.8	-7.3	-0.6	-19.7	-19.8	88.9	17.5
Apr-09	3.5	-5.1	106.7	-51.6	-5.1	-1.3	-11.2	-6.1	12.9	-10.0	-55.2	-5.5	-5.5
Jul-09	-31.0	-10.8	-15.5	27.4	-6.5	5.1	-14.8	-39.4	9.1	28.6	14.4	-9.6	-7.5
% change indexed to first month of data													
Apr-07	99.9	146.5	101.4	87.8	115.9	103.7	87.5	35.9		101.3	100.9	71.8	97.8
Jul-07	160.0	153.4	90.2	96.0	92.9	82.9	107.6	67.0	95.6	130.2	75.6	82.4	101.6
Oct-07	127.7	81.7	87.8	142.0	96.4	113.6	94.7	94.0	120.4	121.4	71.1	90.2	100.2
Jan-08	48.7	97.7	80.9	135.6	105.5	96.2	111.1	98.9	95.9	134.3	129.4	62.8	86.4
Apr-08	91.9	153.8	47.5	317.3	115.5	131.0	110.4	38.6		92.5	111.3	85.2	104.7
Jul-08	147.4	156.1	95.1	96.2	89.2	82.9	120.7	116.0	98.3	89.0	83.8	98.5	104.7
Oct-08	70.7	161.5	108.9	155.7	72.6	117.8	112.6	108.3	136.9	117.3	101.6	77.3	101.2
Jan-09	64.9	92.8	98.3	140.5	85.6	149.5	83.6	91.7	95.3	107.9	103.8	118.5	101.5
Apr-09	95.1	145.9	98.2	153.6	109.6	129.3	98.0	36.3		83.2	49.8	80.5	98.9
Jul-09	101.8	139.3	80.4	122.6	83.4	87.1	102.8	70.4	107.2	114.4	95.9	89.1	96.9

Notes: Yellow indicates growth compared to the preceding year. Orange indicates growth of 10% or more compared to the preceding year. Pink indicates that walking levels were greater than in 2004. Red indicates that walking levels were greater by 10% or more than in 2004.

Table 16.3: Changes in walking counts at individual sites in Darlington according to June data (including June data created by interpolation between April and July counts)

Site	1	2	3	4	5	6	7	8	9	10	11	12	Total	Total excluding Site 11
Jun-02													28349	
Jun-03													27483	
Jun-04	1359	2326	2359	1199	936	2498	748	634		1721	4385	6935	25100	20715
Jun-05	3364	2062	2868	935	1677	2870	837	779		2405	5699	7313	30809	25110
Jun-06	3941	2171	3890	1198	1909	3082	972	1484	1760	1970	2113	7673	32163	30050
Jun-07	5288	3283	3635	1123	1927	2710	988	751	2467	2342	1778	5969	32261	30483
Jun-08	4871	3374	3161	1889	1879	2914	1143	1117	2475	1781	1966	7118	33688	31722
Jun-09	3898	3070	3330	1572	1768	2999	986	778	2728	2013	1697	6550	31388	29691
% change compared to the preceding year														
Jun-05	147.5	-11.3	21.6	-22.0	79.2	14.9	11.9	22.9		39.7	30.0	5.5	22.7	21.2
Jun-06	17.1	5.3	35.6	28.2	13.8	7.4	16.2	90.5		-18.1	-62.9	4.9	4.4	19.7
Jun-07	34.2	51.2	-6.6	-6.3	1.0	-12.1	1.6	-49.4	40.2	18.9	-15.8	-22.2	0.3	1.4
Jun-08	-7.9	2.8	-13.0	68.2	-2.5	7.5	15.7	48.7	0.3	-24.0	10.6	19.2	4.4	4.1
Jun-09	-20.0	-9.0	5.3	-16.8	-5.9	2.9	-13.8	-30.4	10.2	13.0	-13.7	-8.0	-6.8	-6.4
Index compared with 2004														
Jun-05	247.5	88.7	121.6	78.0	179.2	114.9	111.9	122.9		139.7	130.0	105.5	122.7	121.2
Jun-06	290.0	93.4	164.9	99.9	203.9	123.4	129.9	234.1		114.5	48.2	110.6	128.1	145.1
Jun-07	389.1	141.1	154.1	93.7	205.9	108.5	132.1	118.5		136.1	40.6	86.1	128.5	147.2
Jun-08	358.4	145.1	134.0	157.6	200.7	116.7	152.9	176.1		103.5	44.8	102.6	134.2	153.1
Jun-09	286.8	132.0	141.2	131.1	188.9	120.1	131.8	122.7		117.0	38.7	94.4	125.1	143.3

Notes: Yellow indicates growth compared to the preceding year. Orange indicates growth of 10% or more compared to the preceding year. Pink indicates that walking levels were greater than in 2004. Red indicates that walking levels were greater by 10% or more than in 2004.

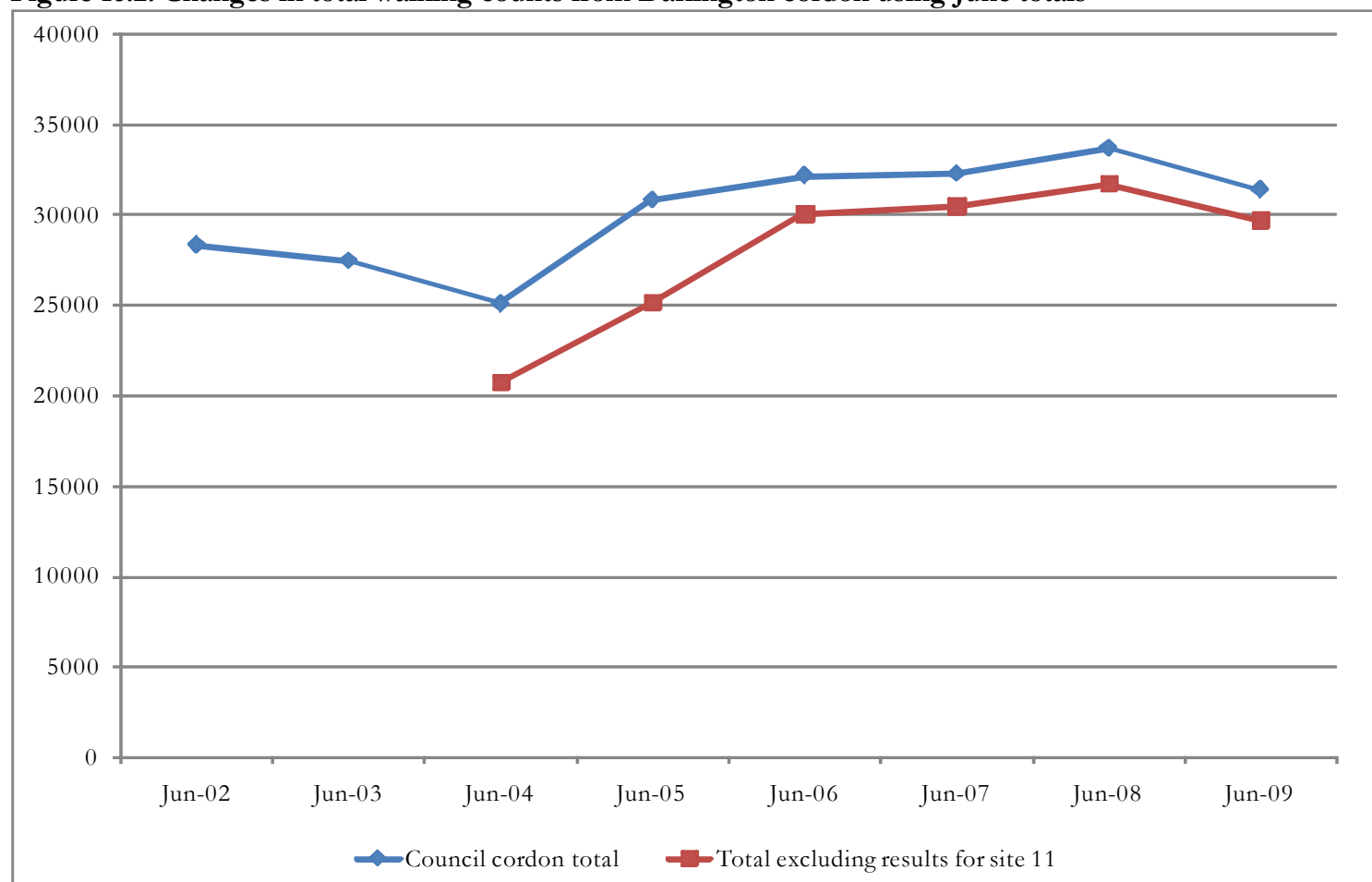
Figure 16.2: Changes in total walking counts from Darlington cordon using June totals

Figure 16.3: Changes in total walking counts from Darlington cordon from April 2006 onwards

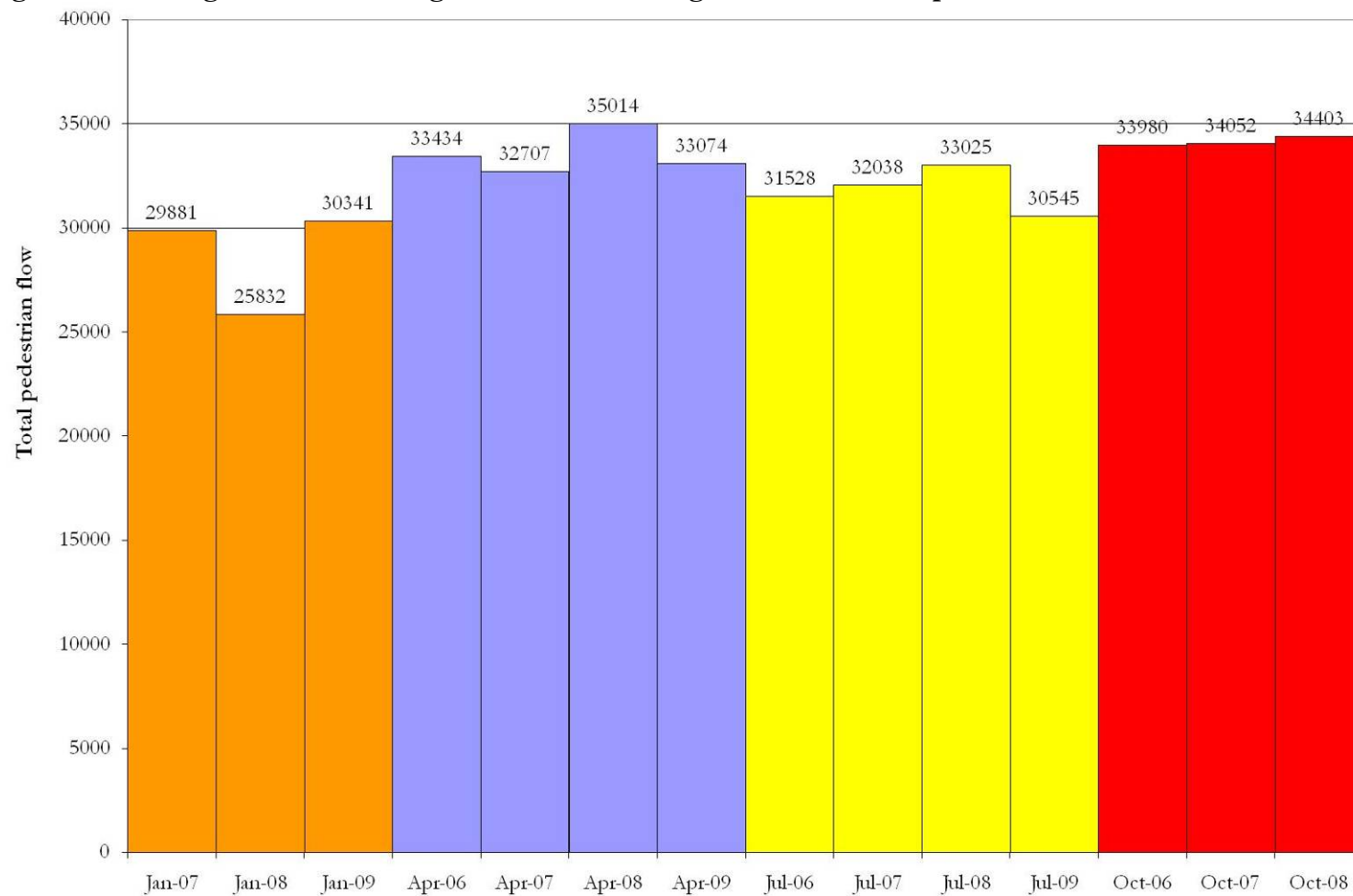


Figure 16.4: Changes in walking counts at individual sites in Darlington using June totals

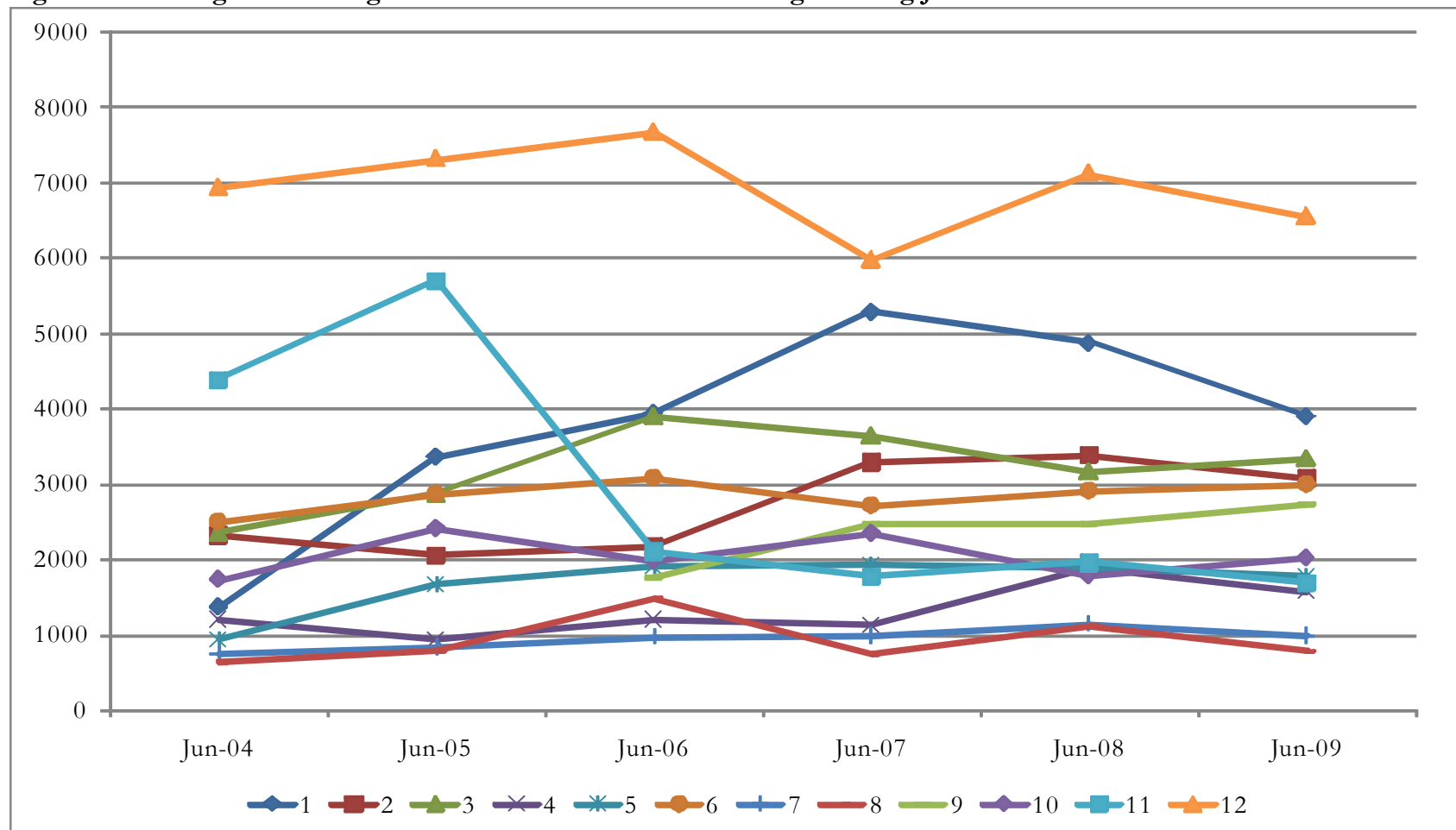


Figure 16.5: Indices of changes at individual walking count sites in Darlington using June totals

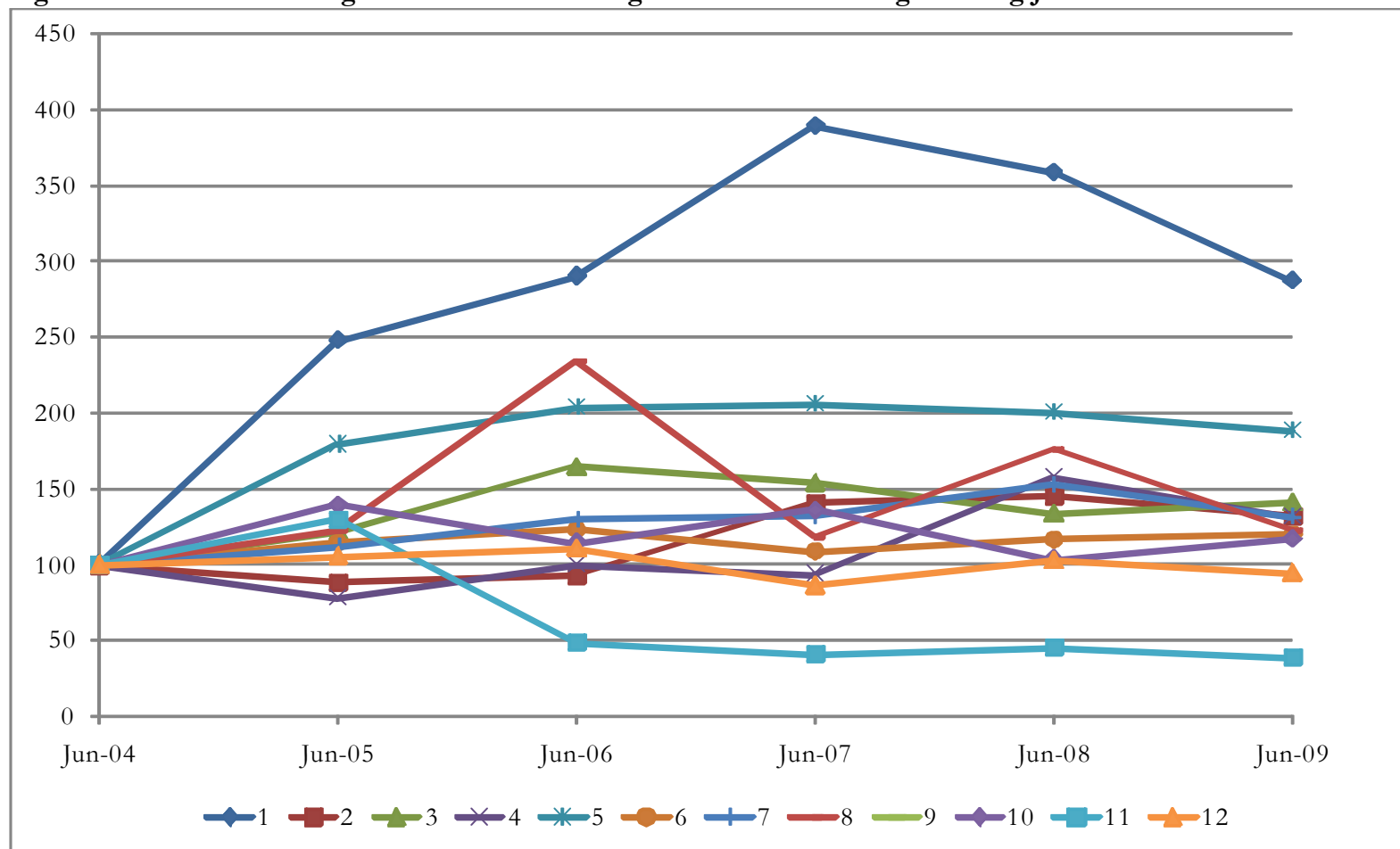


Figure 16.6: Changes in walking counts at individual sites in Darlington

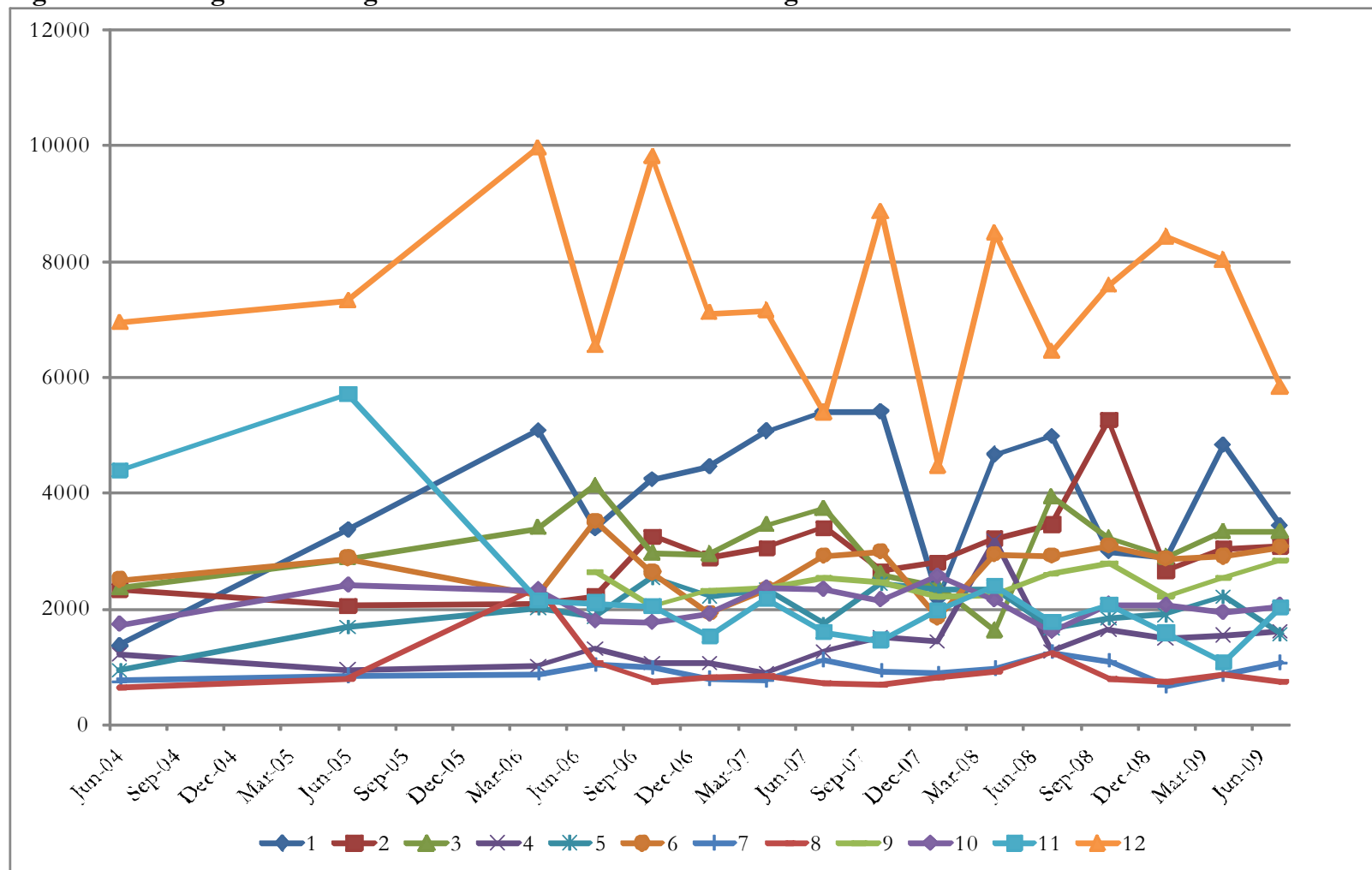


Table 16.4: Relevant walking count totals for different personal travel planning periods in Darlington, and how these changed over time

Personal travel planning Phase 1: comparing count Sites 12,1,2,3 with 4-10		
	Potentially affected sites	Non affected sites
Jun-04	12979	7736
Jun-05	15607	9503
Jun-06	17675	12375
% change 2004-2005	20.2	22.8
% change 2005-2006	13.3	30.2
% change 2004-2006	36.2	60.0
Personal travel planning Phase 2: comparing Sites 1-5, 12 with 6-10		
Jun-05	18219	6891
Jun-06	20782	9268
Jun-07	21225	9258
% change 2005-2006	14.1	34.5
% change 2006-2007	2.1	-0.1
% change 2005-2007	16.5	34.3
Personal travel planning Phase 3: comparing Sites 6-10 with 1-3		
Oct 06: Apr 07	24492	32265
Oct 07: Apr 08	26659	27487
% change	8.8	-14.8

Table 16.5: Darlington household travel survey results

	Phase 1 area	Phase 2 area	Phase 3 area	Phase 2 & 3 area averages	Overall change estimate
<i>Households</i>	11,802	11,675	14,400		
Trips per person per year (unweighted data)					
Autumn 04	230	251	243	246	241
Autumn 05	233			241	239
Autumn 06		315	267		277
Autumn 07	255		255		274
Autumn 08					269
Index compared with 2004					
Autumn 05	101.3			98.0	98.9
Autumn 06		125.5	109.9		114.8
Autumn 07	110.9		104.9		113.6
Autumn 08					111.3
Overall change in trips per person (unweighted data, 2004-08)					11%
Overall change in trips per person (weighted data, 2004-08)					13%
Overall change in distance per person (unweighted data, 2004-08)					15%
Overall change in distance per person (weighted data, 2004-08)					20%

Notes: Red lines indicate timing of personal travel planning interventions. Pale green shading indicates results from area immediately subsequent to personal travel planning. Pale blue shading indicates control area results (as specified by Socialdata & Sustrans). Overall change estimates for Autumn 06 and Autumn 07 are based on interpolation.

Figure 16.7: Darlington index of change in walking over time, according to manual count data and household travel survey data

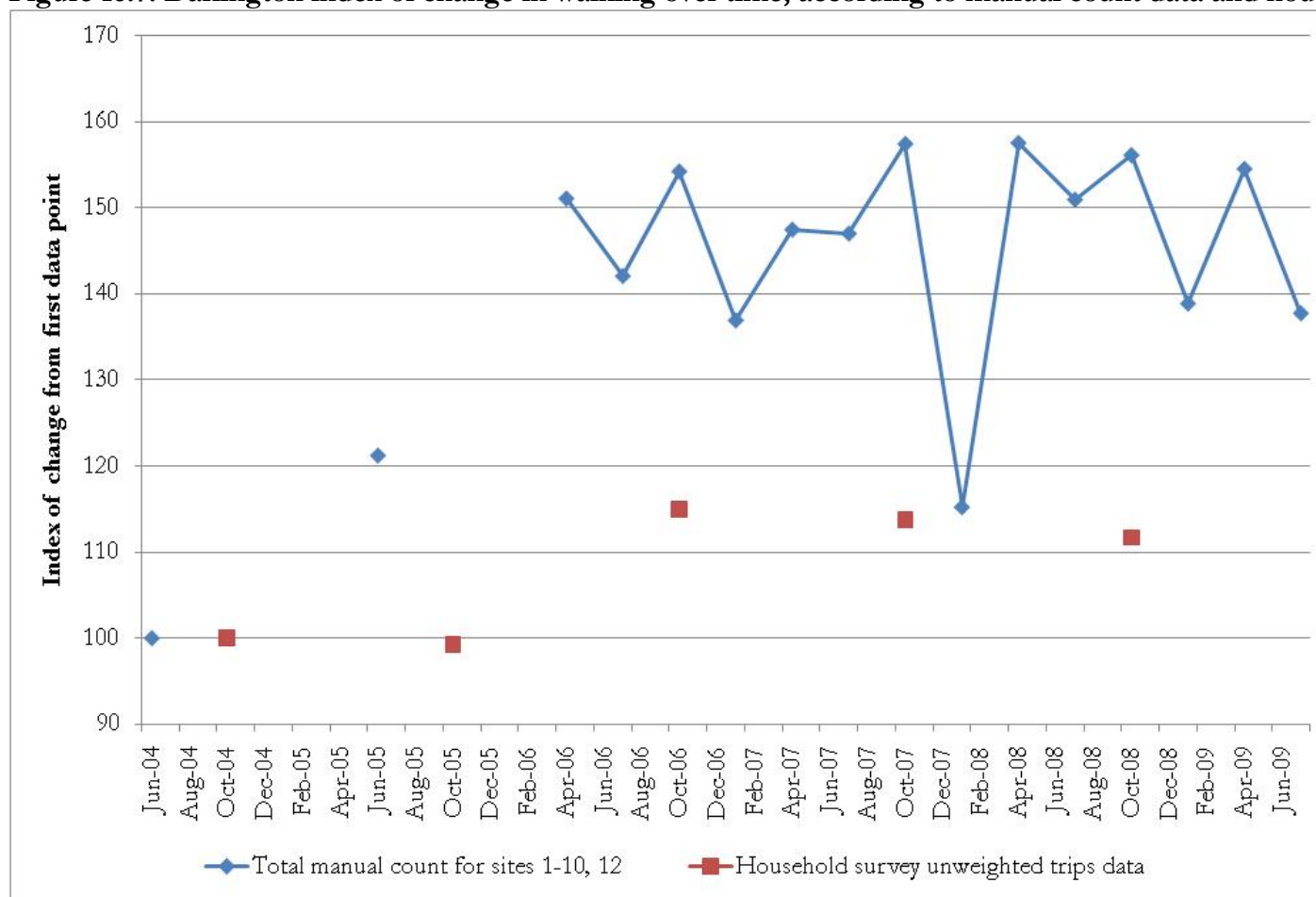


Table 16.6: Set of raw Darlington walk data

	1	2	3	4	5	6	7	8	9	10	11	12	Council total
	Bondgate	St Augustines	Northgate Subway	St Augustines Way	St Cuthberts nr Priestgate	Police/ Fire Station	St Cuthberts way (rear of bus station)	Victoria Rd nr Feethams	Victoria Road nr Sainsburys entrance	Victoria Rd nr Blockbustars	Blackwell gate / West Street	Duke St	
Jun-00													
Jun-01													
Jun-02													28349
Jun-03													27483
Jun-04	1359	2326	2359	1199	936	2498	748	634		1721	4385	6935	25100
Jun-05	3364	2062	2868	935	1677	2870	837	779		2405	5699	7313	30809
Apr-06	5072	2084	3398	999	2006	2240	866	2346		2325	2141	9957	33434
Jul-06	3375	2215	4136	1298	1860	3503	1025	1053	2640	1793	2099	6531	31528
Oct-06	4232	3247	2959	1050	2524	2622	972	732	2035	1767	2034	9806	33980
Jan-07	4450	2873	2941	1053	2213	1916	785	807	2314	1907	1518	7104	29881
Apr-07	5065	3054	3444	877	2325	2323	758	843	2355	2356	2161	7146	32707
Jul-07	5400	3397	3730	1246	1728	2903	1103	705	2523	2335	1587	5381	32038
Oct-07	5403	2652	2598	1491	2433	2978	920	688	2451	2145	1446	8847	34052
Jan-08	2166	2807	2380	1428	2334	1843	872	798	2220	2562	1964	4458	25832
Apr-08	4661	3206	1614	3170	2316	2934	956	906	2236	2150	2383	8482	35014
Jul-08	4976	3458	3935	1249	1660	2904	1237	1222	2594	1596	1758	6436	33025
Oct-08	2993	5245	3223	1635	1832	3089	1094	793	2785	2072	2066	7576	34403
Jan-09	2890	2667	2891	1479	1895	2865	656	740	2206	2058	1575	8419	30341
Apr-09	4824	3041	3336	1534	2199	2896	849	851	2525	1935	1067	8017	33074
Jul-09	3435	3085	3327	1591	1552	3051	1054	741	2829	2052	2012	5816	3435

16.3 Peterborough walk data

16.3.1 Introduction

This section focuses on manual count data, which were collected annually from sites scattered across Peterborough. The main results and conclusions are summarised in section 16.3.5.

16.3.2 Nature of the data

For walking, there were two main sources of manual count data:

- Data from the urban screenline – one-day manual count 12-hour walk data from a day in May each year were collected for the Peterborough urban screenline. This had been in place for more than ten years. Originally, seven sites were monitored. In 2004, two new sites (Rivergate Bridge and Rail World Way) were added. By 2008, Rail World Way had been closed as a route for pedestrians. It is problematic to extract data for individual sites prior to 2004.
- Data from the new city screenline – one-day manual count 12-hour walk data from a day in May each year were collected for the Peterborough new city screenline. This was created in 2005, and involved an arc of five sites to the north-east of the city centre.

The council usually combined some of the data from these two sources (all of the new city screenline sites and six of the urban screenline sites) to produce a city centre ‘walking cordon’. This convention has not been adopted here, because it is more straightforward to assess the two data sources separately.

In our presentation of results (Figures 16.9 and 16.10), we have also combined the data from the three river crossing points that form part of the urban screenline (Rail World Way, Rivergate Bridge and A15 Town Bridge) to give an overall measure of pedestrian flows crossing the river. This is partly because there appears to have been some substitution of flows between the three sites. These values are also included within the urban screenline totals.

Data analysed here are for the period 2004 to 2008, as 2009 data were not available at the time. A map showing the locations of the count sites is given in Figure 16.8.

16.3.3 Data presentation

The following data are presented after section 16.3.5:

- Table 16.8 – a table of the levels of walking recorded at the urban screenline count sites, together with a calculation of the % change compared with the preceding year, and an index of the data compared with the data for 2004;
- Table 16.9 – a table of the levels of walking recorded at the new city screenline count sites, together with a calculation of the % change compared with the preceding year, and an index of the data compared with the data for 2005;
- Figure 16.9 – a graph showing changes in walking levels at the urban screenline, the new city screenline and the river crossing points;

- Figure 16.10 – a graph showing changes in walking levels at the urban screenline, the new city screenline and the river crossing points, indexed to 2004 or 2005, depending on the first year of available data;
- Figure 16.11 – a graph showing changes in walking levels at individual sites over time;
- Figure 16.12 – a graph showing changes in walking levels at individual sites over time, indexed to 2004 or 2005, depending on the first year of available data;
- Table 16.10 – a table assessing evidence from the counts about the effects of personal travel planning;
- Table 16.11 – a summary of the household travel survey results.

16.3.4 Data analysis

Overall effects on walking

The data show a substantial increase in walking over time. As can be seen in Figures 16.9 and 16.10, data from the urban screenline suggest that walking levels were broadly stable prior to the Sustainable Travel Town work, but subsequently increased. Specifically, they were 18% higher in 2008 compared with 2004 (even with the closure of one of the routes where pedestrians were traditionally been monitored). The new city screenline shows an almost identical increase, of 18% – between 2005 and 2008, as does the data from just the river crossing points in the urban screenline (which show an increase of 19% between 2004 and 2008). A one-tailed paired sample T-test performed on the data for the urban screenline sites (excluding Rail World Way), comparing 2004 with 2008, gives a p-value of 0.043, indicating that the change is statistically significant, at the 95% confidence level.

In terms of timing, the urban screenline data suggests that more than half of the increase in walking took place between 2004 and 2005, with relatively little change between 2005 and 2006 but further growth between 2006 and 2008. In contrast, the new city screenline data suggests a big increase between 2005 and 2006, but a decline between 2006 and 2008. The river crossing data also shows a dip between 2007 and 2008 (and this is not entirely due to the closure of Rail World Way, which was only recording up to 190 pedestrians, when the overall total reduced by over 600). More analysis of the variability of walking levels at individual sites is discussed further below.

There are various factors which might account for the growth in walking in Peterborough. One factor is the personal travel planning work, which is discussed separately below. The general travel awareness campaign (*Your Travelchoice*) could also have been significant, as could the effort to promote public transport (since this would have led to more people travelling by bus and then walking to their final destination). School travel work appears to have led to a significant increase in walking, but surveys suggest the growth occurred later in the Sustainable Travel Town designation period (from January 2007 onwards for most schools). Walking for the commute journey also increased, although evidence from the travel plans awards scheme suggests that no organisations began implementing measures until after 2005. One of the walking and cycling routes, branded and promoted by the city council as part of their Sustainable Travel Town programme, runs from the train station to the city centre, and it is likely that pedestrian flows increased on this route. However, these would not have been captured by the screenline data because there was no count site nearby.

Trends in walking at different locations

Figures 16.11 and 16.12 show trends on the levels of walking recorded at individual count sites. Key points are as follows:

- There was only one site – Thorpe Road – where walking reduced.
- There were three sites where walking levels were relatively stable, or there had only been a small increase, (Fletton High Street, A15 London Road and Broadway).
- At the other seven individual sites, and at the river crossings (combined data), walking levels increased by more than 10%, albeit not always according to a smooth trend. The Bishops Road site seems to show particular variability, though in their 2008 report on Peterborough transport data, Atkins commented that the count site was close to the Regional and Lido swimming pools, local sports facilities and the Embankment – a venue for large events, generating significant changes in walking flows on a regular basis.

In interpreting the count data, it should be noted that Peterborough officers felt there was a mismatch between the locations at which pedestrian and cycle data were collected (on main cycle routes and near the city centre) and the locations at which walking and cycling were most expected to increase, given the focus of the *Travelchoice* work. Much of the promotional work encouraged walking and cycling for leisure rather than for utility trips because this was seen as an easy way of ‘getting started’. This might be expected to lead to more cycling and walking on pleasant countryside routes or in neighbourhood parks and green spaces. In this context, it is surprising that the Thorpe Road site, located on a relatively pleasant leisure route, showed a drop, whilst the other sites showed increases. This perhaps indicates that the smarter travel initiatives undertaken were in fact, successful at stimulating walking more generally.

Assessment of personal travel planning effects

In relation to the personal travel planning work, Table 16.7 indicates how the relevant count sites and timings relate to each phase of this work. Meanwhile, Table 16.10 provides analysis of relevant groups of counts, over the relevant time periods.

Table 16.7: Relating Peterborough walking count sites to personal travel planning work

Personal travel planning phase	Potentially relevant count sites	Time when change should be evident
1 (Autumn 05)	New city Screenline	Between 2005 and 2006
2 (Spring 06)	Lincoln Road and Westfield Road	Between 2005 and 2007
3 (Autumn 06)	Mayors Walk and Thorpe Road	Between 2006 and 2007
4/5 (Spring and Autumn 07)	Oundle Road, London Road, Fletton High Street, river crossing sites	Between 2006 and 2008

Examining this information in relation to trends at individual count sites suggests that there was a strong effect from Phases 1 and 2; no effect from Phase 3; and an effect on the Oundle Road count from Phases 4 and 5. (It is possible that Phase 4 also had an effect on the river crossing counts, although, if so, it appears to have been relatively short-lived, and followed a major period of increase anyway.)

Comparison with the household travel survey data

Evidence from the household travel surveys is given in Table 16.11. The broad picture that emerges from this data is that:

- walking trips increased by 8-14%;
- walking distance increased by 14-33%. (The range is due to data weighting);
- the data for Phase 1 and Phases 2/3 both show a substantial increase in walking in the personal travel planning area, compared to that which occurred in the control area.

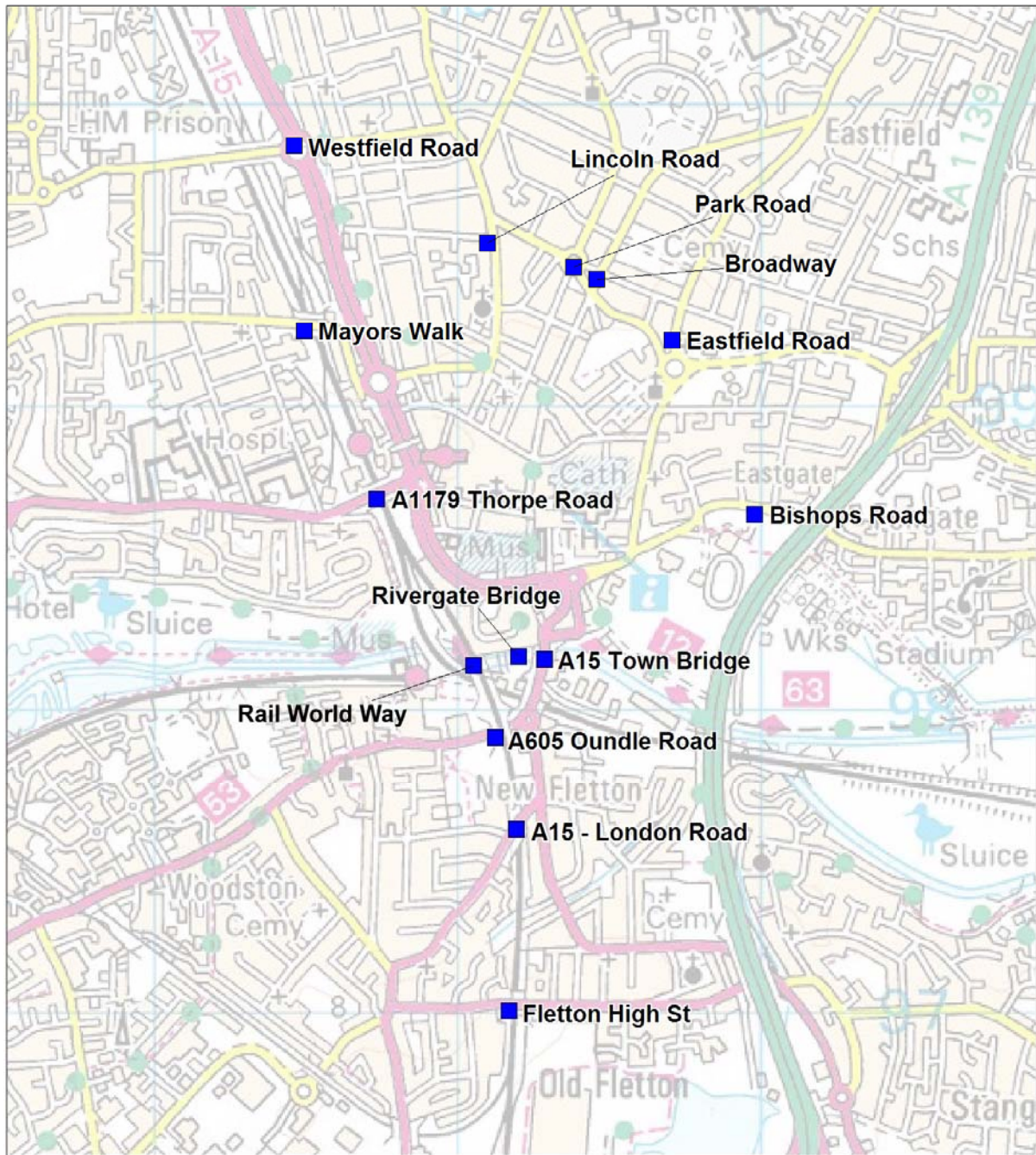
This data is broadly comparable with that emerging from the count data, in terms of the magnitude of the growth in walking that occurred, and in terms of suggesting a picture whereby walking increased in different areas of the city at different times, with potentially strong effects from Phases 1 and 2 of the personal travel planning work (which were focused on the north east, and north parts of the city).

16.3.5 Summary and conclusions about walking in Peterborough

Key conclusions are as follows:

- At the 95% confidence level, there was a statistically significant increase in walking levels in Peterborough of about 18%, between 2004 and 2008. This degree of increase is shown in three different measures (see Figure 16.10), and is broadly consistent with the household survey results.
- The pattern of increases in walking across the city was variable, in both geography and timing. Walking increased from the north east of the city, in parallel with Phase 1 of the personal travel planning, from the north of the city in parallel with Phase 2 of the personal travel planning and at the Oundle Road site immediately south of the city centre (in conjunction with Phases 4 and 5 of personal travel planning). Otherwise, there were increases at the Mayor's Walk count site (in the north-west) and at the river crossings into the town from the south, which do not seem to have been related to personal travel planning. Elsewhere, at Fletton High Street and A15 London Road (located in the south) levels have been roughly stable, whilst at Thorpe Road (in the west) they fell. A significant amount of growth occurred between 2004 and 2005, prior to any personal travel planning work taking place, perhaps indicating the effects of more general travel awareness work.

Figure 16.8: Map of walking count sites in Peterborough at urban screenline and new city screenline



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Table 16.8: Changes in walking counts at individual sites in Peterborough at the urban screenline

	Westfield Road	Mayors Walk	A1179 Thorpe Road	A605 Oundle Road	A15 - London Road	Fletton High St	A15 Town Bridge	Rivergate Bridge	Rail World Way	Total
1998										8874
1999										8971
2000										8908
2001										8100
2002										9349
2003										8738
2004	426	829	2394	767	698	714	2735	581	110	9254
2005	427	935	2395	832	719	745	3695	470	74	10292
2006	589	1140	1969	624	751	727	3683	674	136	10293
2007	662	1042	1913	866	701	705	3783	746	190	10608
2008	989	1334	2053	999	720	766	2924	1161	0	10946
% change compared to previous year										
1999										1.1
2000										-0.7
2001										-9.1
2002										15.4
2003										-6.5
2004										5.9
2005	0.2	12.8	0.0	8.5	3.0	4.3	35.1	-19.1	-32.7	11.2
2006	37.9	21.9	-17.8	-25.0	4.5	-2.4	-0.3	43.4	83.8	0.0
2007	12.4	-8.6	-2.8	38.8	-6.7	-3.0	2.7	10.7	39.7	3.1
2008	49.4	28.0	7.3	15.4	2.7	8.7	-22.7	55.6	-100.0	3.2
Index compared to 2004										
1998										95.9
1999										96.9
2000										96.3
2001										87.5
2002										101.0
2003										94.4
2004	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
2005	100.2	112.8	100.0	108.5	103.0	104.3	135.1	80.9	67.3	111.2
2006	138.3	137.5	82.2	81.4	107.6	101.8	134.7	116.0	123.6	111.2
2007	155.4	125.7	79.9	112.9	100.4	98.7	138.3	128.4	172.7	114.6
2008	232.2	160.9	85.8	130.2	103.2	107.3	106.9	199.8	0.0	118.3

Notes: Yellow indicates growth compared to the preceding year. Orange indicates growth of 10% or more compared to the preceding year. Pink indicates that walking levels were greater than in 2004. Red indicates that walking levels were 10% or more greater than in 2004.

Table 16.9: Changes in walking counts at individual sites in Peterborough at the new city screenline

	Lincoln Road	Park Road	Broadway	Eastfield Road	Bishops Road	Total
2005	1797	1665	1387	1171	239	6259
2006	2397	2209	1490	1593	335	8024
2007	2395	1935	1421	1501	171	7423
2008	2132	2047	1390	1473	307	7349
% change compared with the previous year						
2006	33.4	32.7	7.4	36.0	40.2	28.2
2007	-0.1	-12.4	-4.6	-5.8	-49.0	-7.5
2008	-11.0	5.8	-2.2	-1.9	79.5	-1.0
Index compared with first year of data (2005)						
2006	133.4	132.7	107.4	136.0	140.2	128.2
2007	133.3	116.3	102.5	128.2	71.5	118.6
2008	118.6	122.9	100.2	125.8	128.5	117.4

Notes: Yellow indicates growth compared to the preceding year. Orange indicates growth of 10% or more compared to the preceding year. Pink indicates that walking levels were greater than in 2005. Red indicates that walking levels were greater by 10% or more than in 2005.

Figure 16.9: Changes in total walking counts in Peterborough using amalgamated data from the urban screenline, new city screenline and river crossing count sites

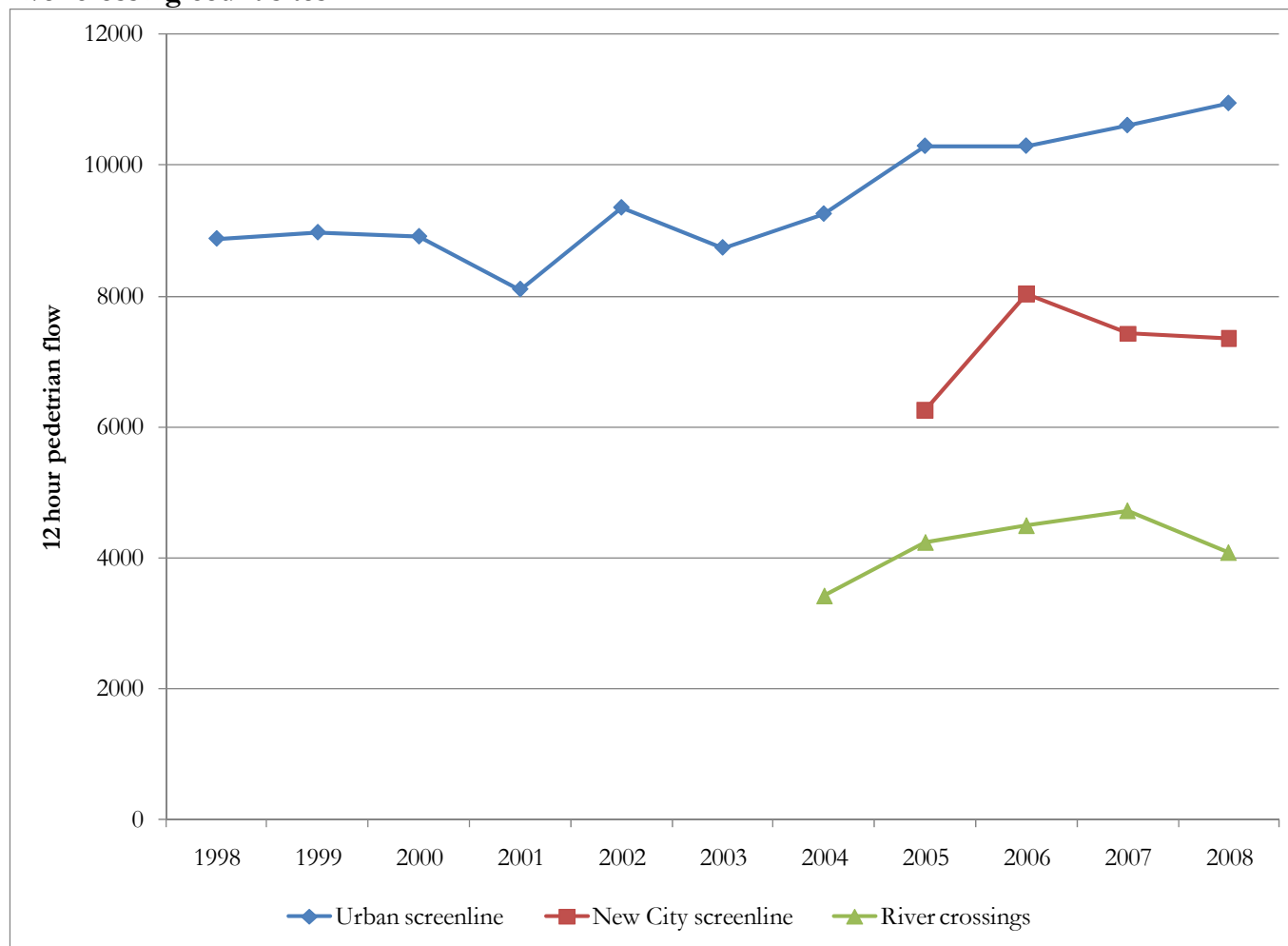


Figure 16.10: Indices of changes in walking counts in Peterborough using amalgamated data from the urban screenline, new city screenline and river crossing count sites (indexed to 2004 or 2005, depending on first year of available data)

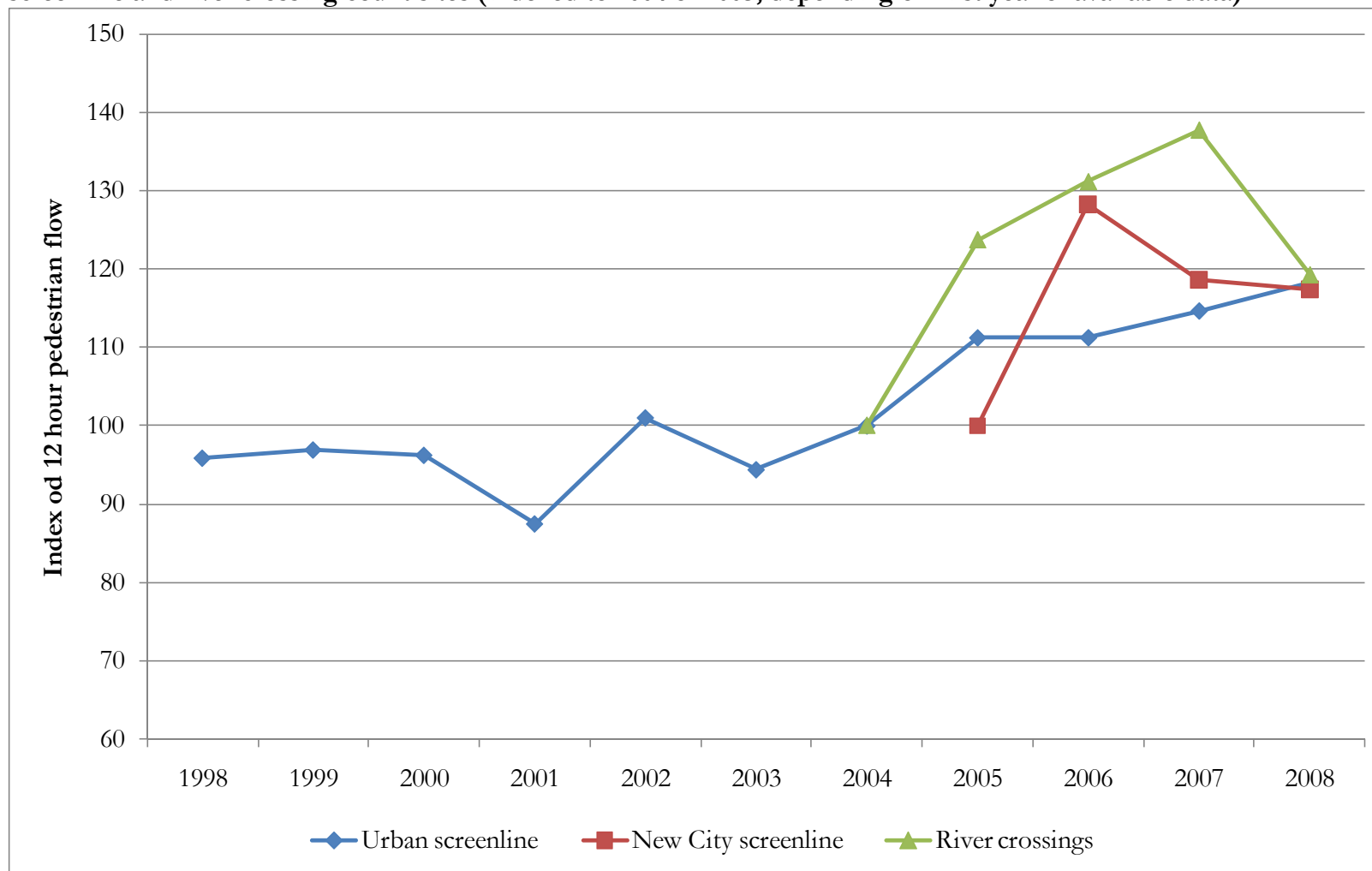


Figure 16.11: Changes in walking counts at individual sites in Peterborough

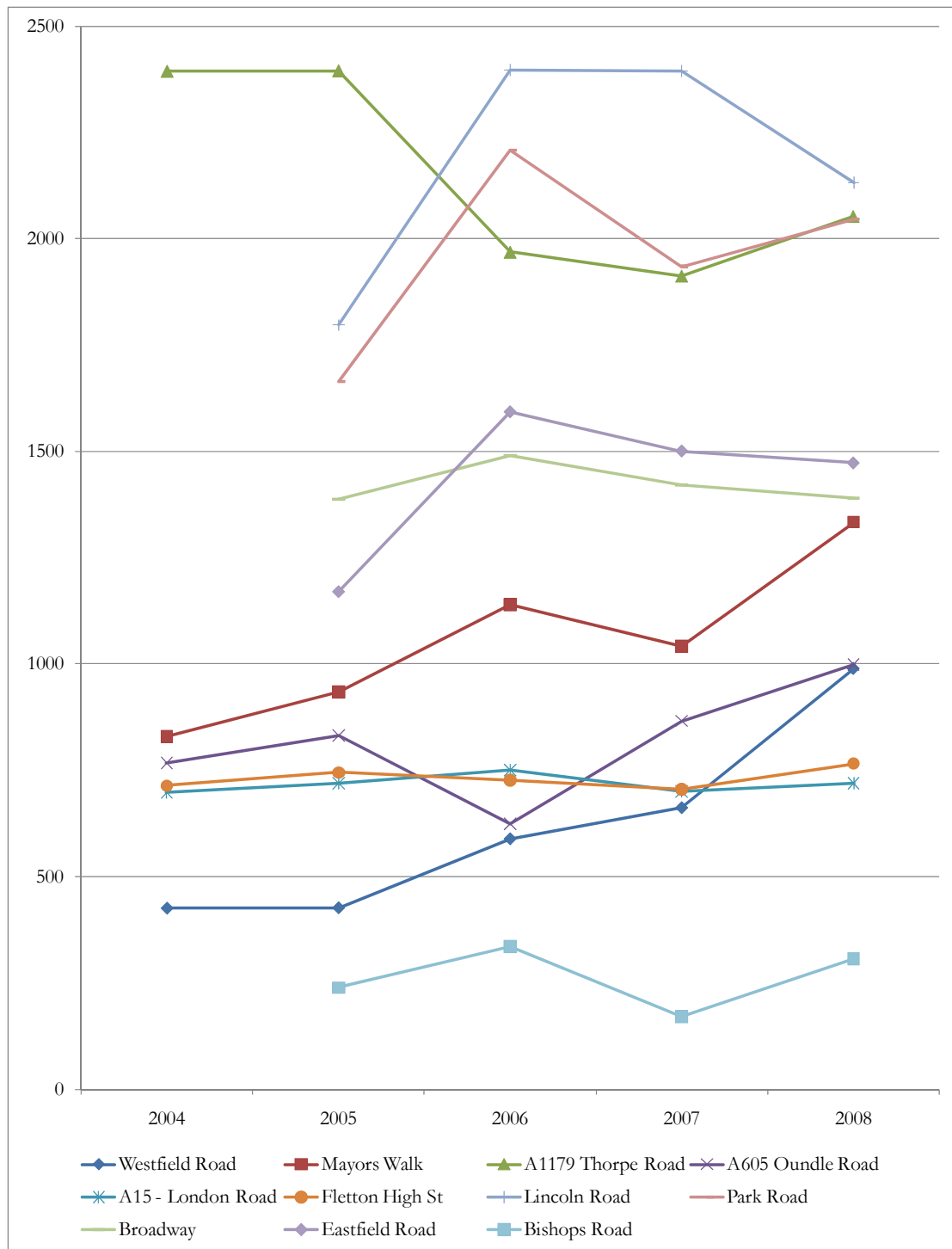


Figure 16.12: Indices of changes at individual walking count sites in Peterborough (indexed to 2004 or 2005, depending on first year of available data)

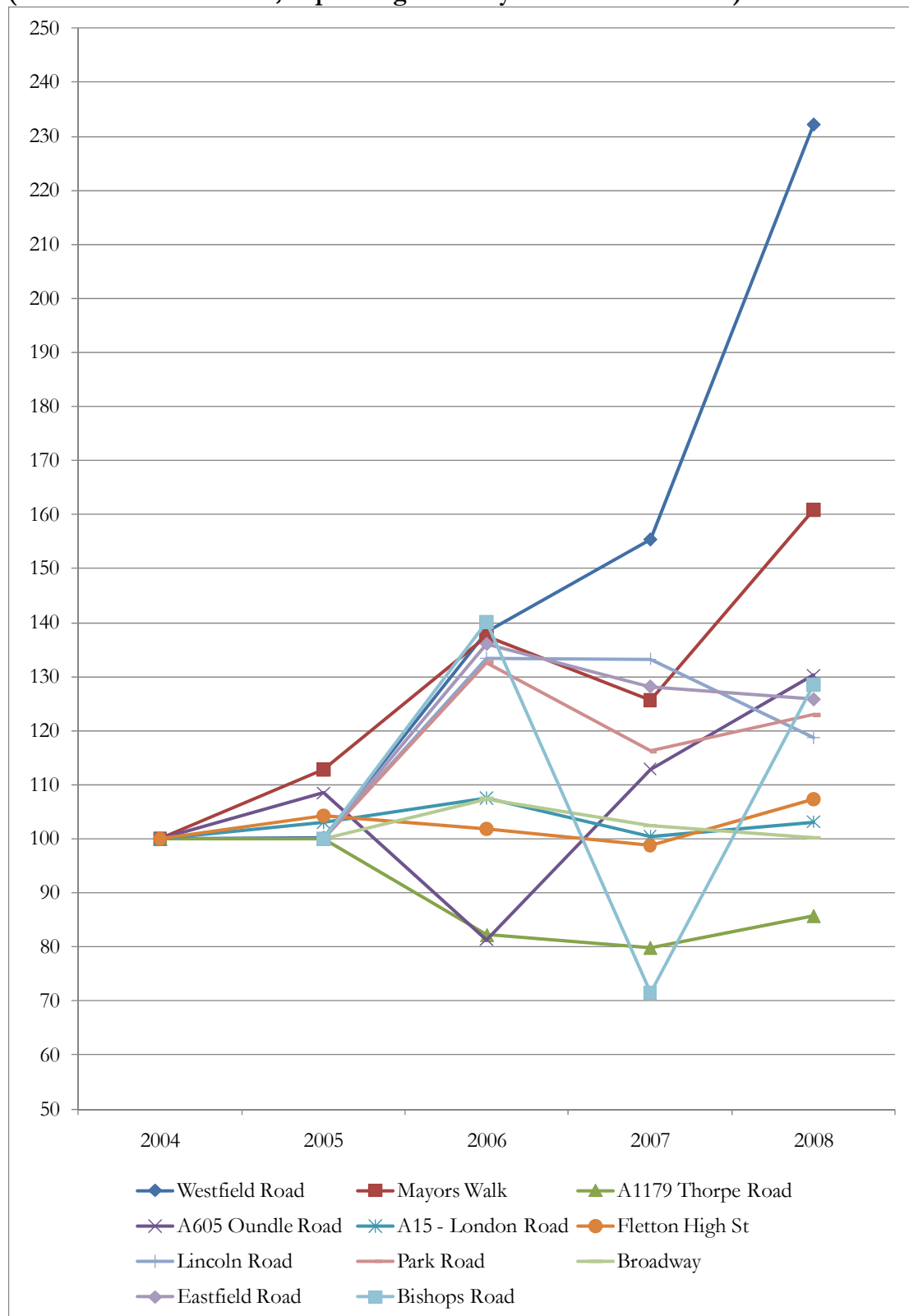


Table 16.10: Relevant walking count totals for different personal travel planning periods in Peterborough, and how these changed over time

Phase	Timing	Potentially affected count sites	Others
1	2005-6	New city screenline +28.2%	0%
2	2005-6	Lincoln Road +33%; Westfield Road +0.2%	7%
	2006-7	Lincoln Road -0.1%; Westfield Road +38%	-2%
	2005-7	Lincoln Road +33%; Westfield Road +38%	5%
3	2006-7	Mayor's Walk -8.6%; Thorpe Road -2.8%	-1%
4/5	2006-7	Oundle Road +39%; London Road -7%; Fletton High Street -3%; river crossings +5%	-6%
	2007-8	Oundle Road +15%; London Road +3%; Fletton High Street +9%; river crossings -13%	6%
	2006-8	Oundle Road +60%; London Road -4%; Fletton High Street +5%; river crossings -11%	0%

Table 16.11: Peterborough household travel survey results

	Phase 1 area	Phase 2 & 3 areas	Outside phase 1 area	Outside phase 2/3 area	Overall change estimate
<i>Population</i>	30,444	55,062	110,096	85,478	
Trips per person per year (unweighted data)					
Oct-04	214	218	228	223	204
Apr-06	255		224		210
Apr-07		243		223	213-219
Oct-08					221
Index compared with 2004					
Apr-06	119.2		98.2		102.8
Apr-07		111.5		100.0	104.5-107.4
Oct-08					108.3
Overall change in trips per person per year (unweighted data)					8%
Overall change in trips per person per year (weighted data)					14%
Overall change in distance per person per year (unweighted data)					14%
Overall change in distance per person per year (weighted data)					33%

Notes: Pale green shading indicates results from area immediately subsequent to personal travel planning. Pale blue shading indicates control data (as specified by Socialdata & Sustrans). Overall change estimates for 2006 and 2007 are based on interpolation. Overall change data are for trips by main mode, whilst personal travel planning data are probably for trip stages. Control data are taken from non-target households. Red line indicates timing of personal travel planning intervention. The change in the number of walking trips of all lengths is +8.3%. The unweighted change in walking trips in Peterborough for trips of less than 50km is +8.6%. The difference arises because there are a small number of trips in each 2004 survey for which the mode is known, but not the distance travelled, which are included when calculating the +8.3% figure but not the +8.6% figure.

16.4 Comparing the results on walking for the three towns

Table 16.12 provides a summary of the walking results for the three towns. The main conclusions that emerge are as follows:

Overall

- All three towns achieved substantial increases in walking, whereas, prior to the Sustainable Travel Towns work, walking levels were stable or declining in Peterborough or Darlington. (Historic data are not available for Worcester.)
- In all three towns, the average distance walked increased by more than the number of trips made – i.e. the average walking trip became longer. This effect seems to have been particularly marked in Worcester.
- The increases in walking in the three towns were different to the national trend evident in National Travel Survey data (as discussed further in Chapter 18).
- Personal travel planning appears to have led to increases in walking in all three towns, though it seems to have been more successful at stimulating walking in some areas than others.
- Peterborough and Darlington manual count data sets show increases in walking at certain count sites and at certain times (notably between 2004 and 2005, but also later than this), which cannot be attributed to personal travel planning work. It is plausible that these increases were due to the general travel awareness campaign work (*Town on the Move/Local Motion* and *Your Travelchoice*).

Darlington

- In Darlington, comparison of the two data sets suggests that walking into the town centre increased by a greater proportion than walking more generally – a reasonably plausible outcome.
- Growth in walking into the town centre in Darlington does not appear to be the result of infrastructure improvements, since the town centre pedestrianisation was completed after the main period of walking increase.
- Walking into the town centre increased from all directions, though analysis of the household survey data suggests that the biggest effect was on residents of the Phase 2 personal travel planning area, which was in the most central part of the city.
- There were increases in walking counts at locations and times that did not correspond to the personal travel planning work (specifically, for the cordon between 2004 and 2005, and at Site 1 in the north-west of the city centre thereafter; and in the personal travel planning Phase 3 area prior to personal travel planning work taking place).

Table 16.12: Changes in walking during the period of Sustainable Travel Town designation

	Darlington	Peterborough	Worcester
Household surveys – increase in trips	11-13%	9-14%	9-12%
Household surveys – increase in distance	15-20%	14-33%	25-29%
Manual count data	25-43% growth into the town centre (higher figure probably more accurate)	Growth of 18% at the screenlines in the inner part of the town	n/a
Timing of growth	Mostly between 2004 and 2006	General growth between 2004 and 2005. Significant growth in the north east between 2005 and 2006. Some further growth from 2006.	n/a
Location of growth	Increases into the town centre from all directions. Greatest increase in flows recorded in the north west corner, and in the Phase 2 personal travel planning area (which was the central part of the town).	Pattern of growth has been variable, There are three sites (Thorpe Road, London Road and Fletton High Street), located in the south and west, where levels have been stable or fallen.	Socialdata & Sustrans analysis suggests personal travel planning Phases 1, 2.1 and 2.2 (which took place in the east and south of the city) all led to increases in walking.
Possible explanations for growth	Pedestrianisation does not explain growth (since it postdated it). Probable explanations are the general travel awareness work (potentially accounting for growth between 2004 and 2005), and the personal travel planning work (particularly Phase 2), where it was focused on residents living close to the centre.	Travel awareness work potentially responsible for growth 2004-5. Personal travel planning work likely to be a significant factor in growth 2005-2007. Mixture of initiatives likely to account for growth after that time.	Physical improvements (pedestrianisation, improved footways and crossings); awareness raising including walking/cycling map; personal travel planning; and school travel work. It is not possible to disaggregate the effects of individual initiatives.

Note: Household survey figures are for ex post survey in Autumn 2008, compared to baseline survey in Autumn 2004; base = all trips under 50km; range shows variation between weighted and unweighted data.

Peterborough

- In Peterborough, there is a reasonable correspondence between the count data and the household travel survey data, in terms of the magnitude of increase achieved.
- The pattern of growth was geographically different, with waves of growth in particular areas occurring at different times, partly in parallel with personal travel planning work, and with count sites in three parts of the city (west and south) showing relatively little increase.
- There were increases in walking in locations which did not seem to correspond to the personal travel planning work (specifically, at the Mayor's Walk and the river crossing count site) implying that the recorded increases in walking were not only due to this.

Worcester

- In Worcester, there were no count data for walking. However, the household survey indicates significant town-wide increases in walking trips and distance. Analysis by Socialdata (Socialdata & Sustrans, 2009) suggests that the three phases of personal travel planning that were evaluated separately all showed greater increases in walking by target households than by those in control areas (with a difference in trips per person per year of 17% for Phase 1; 17% for Phase 2.1 and 22% for Phase 2.2). Overall, the Sustrans/Socialdata surveys suggest that walking increased by 15% (from 23% to 27% of all trips) amongst households who were contacted as part of the personal travel planning work, while it increased by 7% (from 26% to 28% of trips) in other (control) areas of the city that were not offered personal travel planning. As in Darlington and Peterborough, this suggests that increases in walking in Worcester were due to a combination of the personal travel planning work and other activities.

16.5 References

Socialdata & Sustrans (2009) *Worcester: Sustainable Travel Demonstration Town travel behaviour research, final evaluation* Report for Worcestershire County Council