Outcomes of the Cycling Demonstration Towns Programme: Monitoring Programme Report

Individual town results: Derby

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Report authors: Andy Cope, Research and Monitoring Unit, Sustrans

Angela Kennedy, Research and Monitoring Unit, Sustrans Fiona Crawford, Research and Monitoring Unit, Sustrans

Nick Cavill, Cavill Associates

John Parkin, University of the West of England, Bristol

Lynn Sloman, Transport for Quality of Life

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Head Office Sustrans 2 Cathedral Square College Green Bristol BS1 5DD

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1 Introduction

1.1 Description of the Cycling City and Towns programme in Derby

Derby was one of six towns initially engaged in the Cycling Demonstration Towns programme between 2005 and 2008. During the Cycling Demonstration Towns programme, the emphasis of Cycle Derby was exclusively on children and young people¹. Cycling England funding was invested predominantly in smarter measures in schools, including cycle training and other activities. Cycle parking was installed across 67 schools. Cycling England funding was matched by Local Transport Plan capital funds. This was largely invested in improving links to schools and leisure cycling facilities. A total of 6.5km of new route infrastructure was implemented, along with 15 toucan crossings and three advanced stop lines. The total spend during the Cycling Demonstration Towns programme was £3.6 million, of which £2.7 million was capital investment and £0.9 million, revenue.

The subsequent Cycling City and Towns programme, delivered between 2008 and 2011, continued the emphasis on children and young people. Specifically, the core focus of Cycle Derby was on Bikeability and Scootability training, supporting school and community clubs, ensuring secure cycle parking and increasing the numbers of users on Derby's cycle network.

Access to bikes was seen as a major barrier to cycling in areas of high deprivation. Cycles were made available to a number of primary schools in the area to support cycle training activity - this has enabled 5,000 pupils to access some form of cycle training or coaching. Through the collaboration with Groundwork Bikes4All, second-hand bikes have been made available to members of the public. Training has been a core element of the Cycle Derby programme – both Bikeability and Derby's own 'Learn to Ride' provision. Scooter training was also provided. In addition, 42 schools in the area have participated in Bike It, and 106 'Go Ride' clubs have also been delivered. The city has a BMX track. The cycle club attached was originally set up by Cycle Derby and has Go Ride status. Many local schools use the track as part of their PE curriculum.

Between 2008 and 2011, a total of 18.4km of cycle routes were installed, of which 8.3km were traffic free and 10.4km, on-road facilities. A total of 29 new crossings and 16 advanced stop lines were also installed².

1.2 Expenditure

While this report is primarily concerned with the monitoring evidence around outcomes of the Cycling Demonstration Towns programme, it is useful to place these in context through summarising the programme inputs in terms of capital and revenue expenditure. Details of expenditure in Derby during the Cycling Demonstration Town and Cycling City and towns programme are summarised in Table 1-1.

Department for Transport (2009) 'Making a Cycling Town: a compilation of practitioners experiences from the Cycling Demonstration Towns programme. Qualitative survey 2005-2009'. Department for Transport.
 Cycle Derby (2011) Cycle Derby End of Programme Report 2008-2011, Cycle Derby. Available at https://www.gov.uk/government/publications/cycling-england-cycling-city-and-towns-end-of-programme-reports [Accessed 31 May 2012]

Table 1-1 Funds invested in cycling in Derby

	2005-2008	2005-2008	2008-2011	2008-2011
	revenue	capital	revenue	capital
Total	£900,489	£2,740,500	£1,390,000	£4,932,000

1.3 Summary of available monitoring data

The following data sources are available:

- Data from 15 automatic cycle counters
- 12 hour manual counts performed at quarterly intervals at five locations since 2006, and intermittently at a further seven locations since 2009
- Pupil Level Annual School Census (PLASC) travel data and monitoring data from Bike It
- counts of parked bicycles at schools
- STATS19 cycling casualty data
- household survey of physical activity and campaign awareness
- Active People Survey (APS) data.

1.4 Summary of headline findings

Strong evidence of accelerating growth in levels of cycling over time from a moderate initial baseline

The most complete data sets, time series data from automatic cycle counters located predominantly on traffic-free cycle routes, indicate a continued growth in cycling during the second phase of the programme, building on that achieved during the Cycling DemonstrationTowns phase. Most individual count sites saw an increase over the course of the programme – suggesting an overall uplift across the town. The general picture from manual counts is an increase over time, indicating growth in cycling on-road as well as on the traffic-free routes monitored by the network of automatic cycle counters. Notwithstanding the limitations of the data source, levels of cycling to primary and secondary schools appear to have increased over time. Schools engaged with Bike It have seen a significant increase in the numbers of children cycling to school everyday. These latter data sources may reflect the extent of the focus of delivery in Derby on children and young people.

- Automatic cycle counter data indicate an increase in volumes of cycles counted of up to +17% against a 2005 baseline. Based on data from 15 automatic cycle counters, this estimated growth corresponds to an increase from 1,271 trips per day counted in 2005 to 1,493 in 2011
- An increase was observed at ten of the automatic cycle count sites, a decrease at three and no change was observed at two locations
- Growth in levels of cycling recorded by automatic cycle counters was greater at locations close to schools than elsewhere in Derby
- Analysis of manual count data collected across five locations since 2006 indicates an annual average increase of +9%
- Across all schools, the percentage of children cycling to school as measured by PLASC was 1.9% in 2010/11 compared to 0.9% in 2006/07

- Bike It data indicate an increase in children cycling to school on the day of the survey from 4.7% in pre surveys to 17.0% in post surveys, and an increase in children cycling to school everyday from 3.4% in pre surveys to 12.0% in post surveys
- Counts of parked bicycles of schools have increased in both the spring and autumn for both primary and secondary schools between the 2006/07 academic year and 2010/2011
- Compared to pre-programme data, the overall number of cycling casualties was not significantly different during the Cycling City and Towns programme
- Household physical activity surveys indicate that in 2006, 19.5% of respondents cycled in a typical week. This increased to 25.1% in 2009 and by 2011 it was 22.6%
- Active People Survey data indicate an increase in Derby in the proportion of respondents cycling once or more per month and a decrease in the proportion cycling 12 or more times per month between 2005/6 and 2010/11. These changes were not statistically significant,

2 Analysis of automatic cycle counter data

Data are available from a total of 15 counters in Derby. However, the continuity and duration of the time series is variable across these locations. In the following sections information regarding the count location, volumes of cyclists recorded and change in volumes of cyclists recorded over time are presented for each counter site. The cycle counters are located across Derby, providing coverage of a number of radial routes linking to the city centre. Of the 15 sites, two were installed in 1997, three in 2000, one in 2001, one in 2005, seven in 2006 and one in 2007. In order to be consistent across towns within the Cycling City and Towns programme, data from 2005 onwards are included in the analysis.

Two distinct sets of analysis were undertaken using cycle counter data in Derby. In the first, all available data were analysed using a regression model to allow an estimate of change in cycle trips recorded over the programme period against a baseline. This analysis was initially performed using data from all counters. Further analysis was performed using a subset of seven counters with the most complete time series across the Cycling City and Towns programme period.

In the second set of analysis, data from individual sites were analysed in order to determine the average volumes of cyclists recorded, distribution of cycle trips over the course of the day and (where sufficient data are available) the annual percentage change in the count of cyclists.

2.1 Town-wide analysis

In 2009, following the Cycling Demonstration Towns phase, an increase in counts of cyclists of +10% was reported, relative to a 2005 baseline and including data to the end of March 2009 (Table 2-1).

Table 2-1 Change in cycle count in Derby at the end of the Cycling Demonstration Towns period relative to a 2005 baseline (baseline = 100%)

	2005	2006	2007	2008	2009
Change against 2005 baseline	100%	95%*	98%	103%*	110%*

^{*} indicates a significant difference (p<0.05) compared to the 2005 baseline

Table 2-2 presents the percentage change in cycle counts in relative to a 2005 baseline including data from all counters to the end of September 2011.

Table 2-2 Change in cycle count in Derby at the end of the Cycling City and Towns period relative to a 2005 baseline (all counters, baseline= 100%)

	2005	2006	2007	2008	2009	2010	2011
Change against 2005 baseline	100%	96%*	102%	103%*	113%*	107%*	117%*

^{*} indicates a significant difference (p<0.05) compared to the 2005 baseline

The figures differ between these two tables for two reasons. Firstly, the counters included in the analysis differ slightly. In the original Cycling Demonstration Towns analysis a count site on Meadow Road Riverside Track was included in the analysis as data were available up to September 2008. As no more recent data were available (due to a route closure) this counter was not included in the current analysis up to September 2011. Also, an additional counter (Racecourse North) has been included in the analysis as data was available from January 2007 and therefore it was considered relevant to the analysis. Secondly, the 2009 figure differs between the two tables as the first includes data to March 2009 only, whereas the most recent analysis includes data to December 2009.

Several counters in Derby have disrupted or incomplete time series, and several ceased data collection in 2009. A second analysis was performed using data from a subset of seven counters, comparing growth at these sites against a 2005 baseline (Table 2-3). These seven counters are the only counters for which data were available for 2011 (Map 2-1).

Map2-1 Subset of Derby counters with data available in 2011 (site numbers refer to Table 2-7)

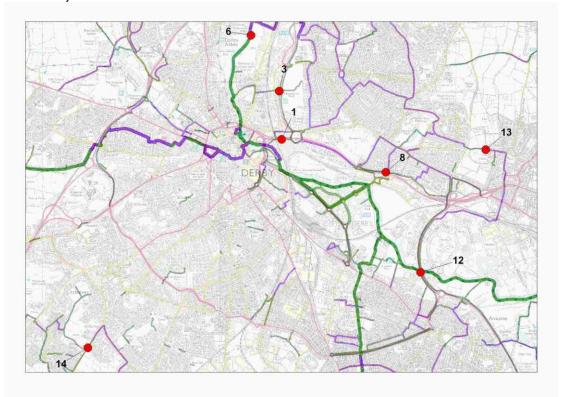


Table 2-3 Change in cycle count in Derby at the end of the Cycling City and Towns period relative to a 2005 baseline (counters with most complete time series, baseline = 100%)

	2005	2006	2007	2008	2009	2010	2011
Change on 2005 baseline	100%	91%*	98%	100%	108%*	101%	113%*

^{*} indicates a significant difference (p<0.05) compared to the 2005 baseline

Tables 2-2 and 2-3 indicate a drop off in levels of cycling in 2010 compared to 2011. In order to explore whether this was influenced by the poor weather experienced throughout the UK in late 2009 and early and late 2010, an additional element was added into the regression model. Table 2-4 presents the findings of this analysis for all counters and Table 2.5, for the subset of seven counters with the most complete data.

Table 2-4 Change in cycle count in Derby at the end of the Cycling City and Towns period relative to a 2005 baseline (all counters), including an adjustment for snow (baseline = 100%)

	2005	2006	2007	2008	2009	2010	2011
Change against 2005 baseline	100%	96%*	102%	103%*	114%*	112%*	118%*

^{*} indicates a significant difference (p<0.05) compared to the 2005 baseline

Table 2-5 Change in cycle count in Derby at the end of the Cycling City and Towns period relative to a 2005 baseline (counters with most complete time series), including an adjustment for snow (baseline = 100%)

	2005	2006	2007	2008	2009	2010	2011
Change against 2005 baseline	100%	91%*	98%	100%*	108%*	107%*	113%*

^{*} indicates a significant difference (p<0.05) compared to the 2005 baseline

When a factor to represent the impact of poor weather conditions is included in the model, growth in 2010 compared to the baseline remains less than in preceding years, although the decline is less marked.

Table 2-6 (for all counters) and Table 2-7 (for the counters with the most complete time series) present change over time for the Cycling City and Towns period, comparing cycling levels in 2011 to a 2007 baseline.

Table 2-6 Change in cycle count in Derby at the end of the Cycling City and Towns period relative to a 2007 baseline (all counters, baseline = 100%)

	2007	2008	2009	2010	2011
Change against 2007 baseline	100%	102%*	111%*	104%*	115%*

^{*} indicates a significant difference (p<0.05) compared to the 2007 baseline

Table 2-7 Change in cycle count in Derby at the end of the Cycling City and Towns period relative to a 2007 baseline (counters with most complete time series, baseline = 100%)

	2007	2008	2009	2010	2011
Change against 2007 baseline	100%	101%	109%*	102%*	115%*

^{*} indicates a significant difference (p<0.05) compared to the 2007 baseline

Analysis performed at the end of the Cycling Demonstration Towns period (including data to March 2009) indicated a +10% change in bicycles counted across Derby against a 2005 baseline. Cycling counts dropped relative to the baseline in 2006, followed by a gradual increase to 2009. This gradual growth has continued during the second phase of the programme, with the exception of 2010 when volumes of counts declined, potentially the result of less favourable weather conditions for cycling throughout the UK in early and late 2010. On the basis of analysis performed using all of the counters and a subset of counters, the change in counts of cycles over the course of the Cycling Demonstration Towns and Cycling City and Towns programme is between +13% and +17%. Given that there was a drop in cycling levels in 2006, the growth in cycling levels relative to this lower level in 2006 is between +23% and +24%.

2.2 Analysis of data from individual sites

Data from individual cycle counters were analysed in order to determine the rate of change in volumes of counts recorded at each location over time. The results of this analysis are summarised in Table 2-8 and alongside more detailed information for each counter in Table 2-9. Sufficient data are available to robustly estimate the annual percentage change in the number of cyclists counted for 11 of the 15 automatic cycle counters. Of the remaining three count sites, based on the more limited data available, change over time is positive for two and negative for one count sites.

Table 2-8 Summary of findings of detailed analysis of data from individual count sites

	All counters	Counters with most complete data
Number of counters for which data are available	15	7
Number of counters for which sufficient data are available to quantify change over time ³	12	7
Number of counters with quantifiable increase	8	4
Number of counters with no change	2	2
Number of counters with quantifiable decrease	2	1

In the following table counters are ordered by their location relative to the centre of Derby, starting with those located closest to the town centre. Map references refer to the accompanying map (section 8).

³ None of the changes are statistically significant.

Table 2-9 Description of automatic cycle counters in Derby

Map reference	Location	Time period	Annual change ^b	Average daily count in 2010°	Comments
1.	Eastgate cycle trackd	2006-2011	Weekday: +3% Sat/Sun: +2%	Overall: 266 Weekdays: 290 Weekend days: 163	Located on a traffic free segregated cycle path adjacent to the A52 Eastgate, half a mile east of the centre of Derby. The counter is on an important route to the town centre, close to businesses and a recreation ground. Weekday data show 'commuting' peaks.
2.	Handyside Bridge, Darley Park	2006-2009	negative	Overall: 156 Weekdays: 165 Weekend days: 120	Located on a traffic free route linking to National Route 54 of the National Cycle Network, half a mile from the centre of Derby in Little Chester. An industrial park is nearby. Weekday counts show 'commuting' peaks.
3.	Cut Lane, on a link between Chaddesden and the city centre	2005-2011	Weekday: +6% Sat/Sun: +4%	Overall: 81 Weekdays: 89 Weekend days: 54	Located on a traffic free shared use path under the A61 that links Little Chester to Racecourse Park, approximately three quarters of a mile north-east of the centre of Derby. The route provides a short cut from Chaddesden to the city centre. Weekday counts show 'commuting' peaks.
4.	Racecourse North	2007-2009	positive	Overall: 66 Weekdays: 77 Weekend days: 44	Located on a traffic free shared use path around the edge of playing fields in Racecourse Park, approximately three quarters of a mile north-east of the centre of Derby monitoring access to a school. Weekday counts show 'commuting' peaks.
5.	Pride Park Riverside cycle track	2005- 2010 ^a	Weekday: +4% Sat/Sun: +1%	Overall: 417 Weekdays: 468 Weekend days: 252	Located on National Route 6 of the National Cycle Network, a traffic free shared use path adjacent to the River Derwent, approximately three quarters of a mile south-east of the centre of Derby. A railway station, sidings, industrial land and housing are nearby. This is a key route for commuters travelling to Derby from the east. Weekday counts show 'commuting' peaks.

6.	River Derwent Cycle Track ^d	2006-2011	Weekday: 0% Sat/Sun: +2%	Overall: 109 Weekdays: 121 Weekend days: 87	Located on National Route 54 of the National Cycle Network, a traffic free shared use greenway adjacent to the River Derwent close to green spaces, a rugby ground and housing. It is located approximately one mile north of the centre of Derby in Darley Abbey. Weekday counts show 'commuting' peaks.
7.	Kedleston Road cycle path	2005- 2009 ^a	Weekday: +5% Sat/Sun: -7%	Overall: 98 Weekdays: 111 Weekend days: 45	Located on a segregated traffic free cycle route adjacent to Kedleston Road, approximately one mile north-west of the centre of Derby close to school and university sites. Weekday counts show 'commuting' peaks.
8.	A52 Near Meadow Lane ^d	2006-2011	Weekday: -4% Sat/Sun:-4%	Overall: 31 Weekdays: 36 Weekend days: 21	Located on a traffic free shared use path adjacent to the dual carriageway A52 in Cherrytree Hill, one and a half miles east of the centre of Derby. A residential area lies to the north and a school is located nearby. Weekday counts show 'commuting' peaks.
9.	Repton Avenue cycle track	2006-2009	positive	Overall: 55 Weekdays: 61 Weekend days: 43	Located on a traffic free shared use path between houses linking an urban A road to a smaller residential road in Normanton, approximately one and three quarters of a mile south-west of the centre of Derby. Weekday counts show 'commuting' peaks.
10.	Canal Cycle path off A6 Alvaston	2005- 2010 ^a	Weekday:+5% Sat/Sun:+4%	Overall: 213 Weekdays: 302 Weekend days: 141	Located on National Route 6 of the National Cycle Network, a traffic free shared use greenway on a disused canal path in Crewton, two miles south-east of the centre of Derby. A school site and industrial areas are nearby. Weekday counts show 'commuting' peaks.
11.	Mickleover to Mackworth cycle track	2005- 2009 ^a	Weekday:+1% Sat/Sun: -9%	Overall: 44 Weekdays: 45 Weekend days: 38	Located on National Route 54 of the National Cycle Network, a traffic free shared use greenway adjacent to dismantled railway in semi urban green space two and a half miles west of the centre of Derby. School and college sites are nearby. Weekday counts show 'school' and 'commuting' peaks.

12.	Raynesway cycle track d	2005- 2011 ^a	Weekday:0% Sat/Sun:-5%	Overall: 147 Weekdays: 298 Weekend days: 69	Located on a traffic free link joining National Route 6 of the National Cycle Network (riverside greenway) to a traffic free path adjacent to Raynesway A5111 dual carriageway, approximately two and a half miles south-east of the centre of Derby. Utility works, business areas and the River Derwent are nearby. Weekday counts show 'commuting' peaks.
13.	Cycle path to West Park School, Spondon	2006-2011	Weekday:+6% Sat/Sun:+1%	Overall: 56 Weekdays: 67 Weekend days: 33	Located on a traffic free segregated path in Spondon, approximately two and a half miles east of the centre of Derby. School sites are nearby. Weekday counts show 'school' and 'commuting' peaks.
14.	Moorway Lane, near Derby Moor High School ^d	2006-2011	Weekday:+14% Sat/Sun:+5%	Overall: 60 Weekdays: 69 Weekend days: 34	Located on a traffic free segregated cycle path, approximately two and three quarter miles from the centre of Derby. School and college sites are nearby. Weekday counts show 'commuting' peaks
15.	Cycle path off A514 Shelton Lock	2005- 2010 ^a	Weekday:+6% Sat/Sun:0%	Overall: 124 Weekdays: 134 Weekend days: 77	Located on National Route 6 of the National Cycle Network, a traffic free shared use greenway on a disused canal path, approximately three and a half miles south south-east of the centre of Derby. Weekday counts show 'commuting' peaks.

a data are also available for earlier periods, but to ensure consistency these have not been included in the analysis
b for counters with less than 36 months of data only a tentative indication as to the direction of the change can be reported
c for counters with time series terminating before 2010, this value is the average daily count for the most recent year for which data are available
d this counter has been included within the subset of seven counters which have a more complete data series

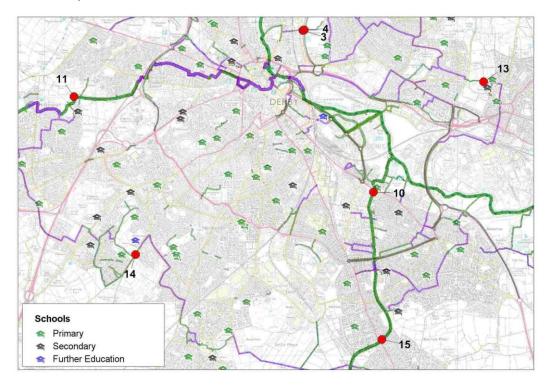
2.3 Relationship between programme activity and automatic count data

2.3.1 Cycling to schools

The Cycling City and Towns programmes delivered in Derby had a particular emphasis on work with schools. Six automatic cycle counters have been identified as monitoring routes providing access to schools:

- Cycle path off A514 Shelton Lock (data to end of 2009, map reference 15)
- Canal cycle path off A6 Alvaston (data to end of 2009, map reference 10)
- Mickleover to Mackworth cycle path (data to end of 2009, map reference 11)
- Racecourse North (data to end of 2009, map reference 4)
- Cut Lane, on link between Chaddesden and the city centre (map reference 3)
- Cycle path to West Park School, Spondon (map reference 13)
- Moorway Lane near Derby Moor high school (map reference 14)

Map 2-2 Cycle counters monitoring access to schools in Derby (site numbers refer to Table 2-9)



All count sites located close to schools have seen a growth in volumes of cycles counted over time. Table 2-10 presents the average annual change at each site based on the data available.

Table 2-10 Average annual percentage change in weekday counts recorded at locations close to schools in Derby

Counter	Average annual % change in daily weekday count
Cycle path off A514 Shelton Lock	+6%
Canal cycle path off A6 Alvaston	+5%
Mickleover to Mackworth cycle path	+1%
Racecourse north	positive ^a
Cut Lane, on a link between Chaddesden and the city centre	+6%
Cycle path to West Park School, Spondon	+6%
Moorway Lane near Derby Moor high school	+14%

^a for counters with less than 36 months of data only a tentative indication as to the direction of the change can be reported

In order to explore the relative change at counter locations close to schools, counters are ranked in order of increasing annual average percentage change calculated using weekday and weekend day in Table 2-11. Count sites located close to schools are indicated by bold text. Based on weekday data, there is a tendency for counters close to schools to appear higher up the ranking; when the ranking is done on the basis of annual average percentage change calculated using weekend day data, there is less clustering of counters close to schools near the top of the list. This suggests a generally stronger growth at count sites located close to schools than elsewhere in Derby.

Table 2-11 Ranking of counters in order of increasing annual average percentage change calculated using weekday and weekend day data

Counters ranked bas weekday data	sed on change in	Counters ranked based on change in weekend day data			
Counter number ^{a,b}	Annual average % change	Counter number ^{a,b}	Annual average % change		
14	+14%	14	+5%		
3	+6%	3	+4%		
13	+6%	5	+4%		
15	+6%	10	+4%		
7	+5%	1	+2%		
10	+5%	6	+2%		
5	+4%	13	+1%		
1	+3%	4	positive		
11	+1%	9	positive		
4	positive	15	0%		
9	positive	8	-4%		
6	0%	12	-5%		
12	0%	7	-7%		
8	-4%	11	-9%		
2	negative	2	negative		

a counter numbers refer to the accompanying map and Table 2-9

Combined analysis from all seven sites identified as being located close to schools indicated an increase in cycling levels of +41% in 2011 against a 2005 baseline (compared to +17% for all counters, Table 2-2). Refining this analysis to use only those counters with the most complete data to 2011 indicates an increase of +33% against a 2007 baseline (compared to +15% for all counters, Table 2-7). Both analyses indicate a greater growth at count sites close to schools than in other parts of Derby, consistent with the emphasis of the work programme delivered by Cycle Derby.

The hourly distribution of counts for all locations show peaks at commuting times, with the afternoon peak in counts beginning from 4pm; comparing hourly distributions between 2007 and 2011 indicates growth at these times of day (Chart 2-1- Chart 2-3).

^b counters located close to schools are indicated in bold

Chart 2-1 Median count per hour on weekdays in 2007 and 2011 – Cut Lane, on a link between Chaddesden and the city centre

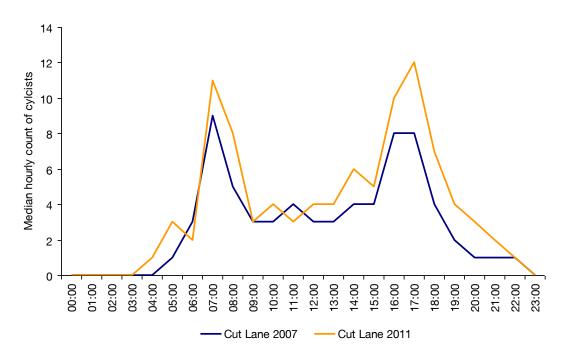


Chart 2-2 Median count per hour on weekdays in 2007 and 2011 – Cycle path to West Park School, Spondon

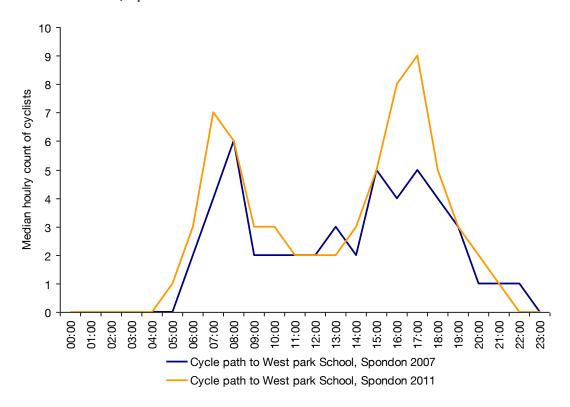
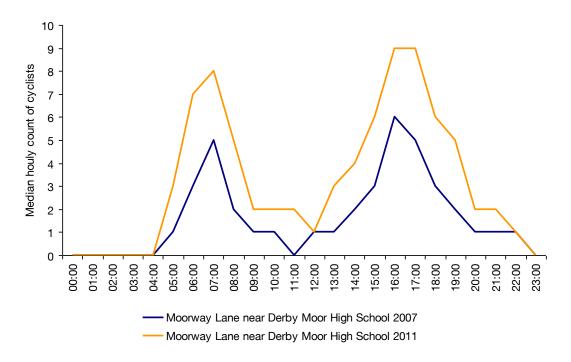


Chart 2-3 Median count per hour on weekdays in 2007 and 2011 – Moorway Lane near Derby Moor High School



Four manual count sites also cover potential access routes to schools. Combining data from the two manual count sites which have a longer series of data (Osmaston Park Road and Uttoxeter New Road) with comparable data from the automatic cycle counters listed above indicates a 20.9% increase in the volumes of cyclists recorded between April and July 2007 and the same periods in 2009. This is a significant increase.

2.3.2 Movement to other trip attractors: workplaces and leisure facilities

Two counters were identified as being located on routes either close to key employment areas or on routes generally important for commuting:

- Raynesway cycle track, located close to the Balfour Beattie site to the south east of Derby city centre (map reference 12)
- Pride Park riverside track, a route popular for commuting journeys accessing the city centre from the south east (map reference 5)

The daily count of cyclists recorded at these locations on weekdays are presented in Chart 2-4; based on weekday data, the average annual change in the average daily count is 0% for the counter located on Raynesway cycle track and +4% for the counter located on Pride Park riverside track. Considering hourly data, the greatest volumes of cyclists are counted at commuting times, consistent with location. Comparing data collected in 2007 and 2010 (Chart 2-5) indicates growth in use at commuting times at the Raynesway cycle track site. For the Pride Park site, growth is less marked at these times.

Chart 2-4 Median daily count of cyclists recorded at Pride Park riverside track and Raynesway cycle track

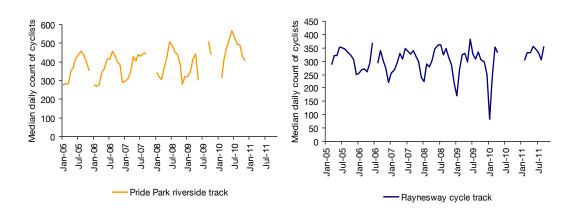
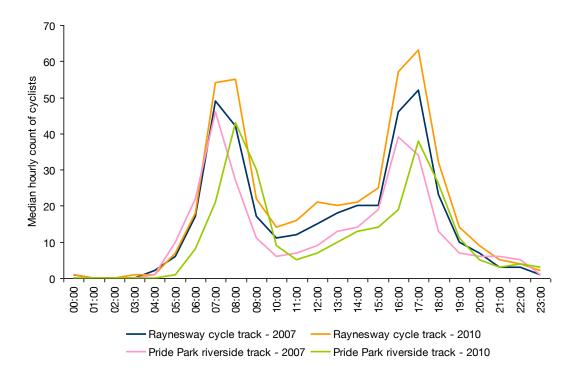


Chart 2-5 Median hourly count of cyclists recorded at Raynesway cycle track and Pride Park riverside path



BMX has featured in Cycle Derby's work programme. A counter located on Eastgate cycle path, as well as being located in a business area and on a key access route to the town centre, is close to Bass Recreation Ground, where a multi-sports area (including BMX) opened in 2011. The route monitored by this counter is reported to be well used by BMX riders. The number of cyclists recorded at the Eastgate location has grown at a rate of +3% per year based on data collected between 2007 and 2011. Plots of the hourly distribution of counts recorded are presented in Chart 2-6 and Chart 2-7, comparing 2007 and 2011 data broken down by the direction of travel. The broadly similar distribution of counts between the two channels over the course of the day, particularly at weekends, is typical of counter in a central location

monitoring trips to multiple surrounding trip attractors. On comparing 2007 and 2011 data, growth has been in use over the whole day rather than being particularly centred on commuting times.

Chart 2-6 Median count per hour recorded on Eastgate cycle path on weekdays in 2007 and 2011

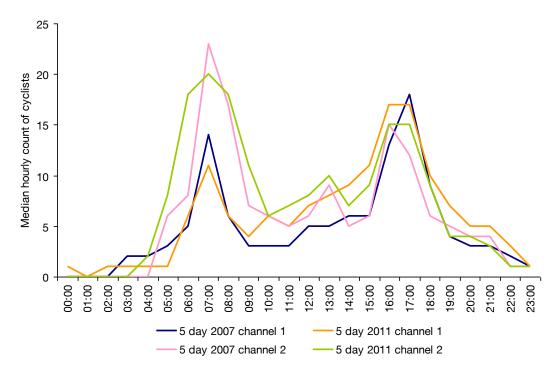
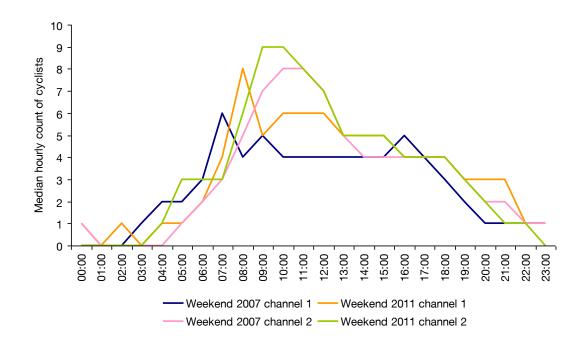


Chart 2-7 Median count per hour recorded on Eastgate cycle path on weekend days in 2007 and 2011



Counters close to workplaces and BMX facilities are indicated in the ranking exercise (as presented for schools only in Table 2-11) in Table 2-12 below. These

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counters tend to show a lesser change over time, based on weekday data, than counters close to schools. The count site close to the BMX track (site 1), and the counter located on the Pride Park Riverside path (site 5) appear near the top of the list of count sites when ranked by annual average change calculated from weekend day data. This is consistent with the leisure use expected to be recorded at such locations.

Table 2-12 Ranking of counters in order of increasing annual average percentage change as calculated using weekday and weekend day data

Counters ranked base weekday data	ed on change in	Counters ranked base weekend day data	d on change in
Counter number ^{a,b,c}	Annual average % change	Counter number ^{a,b,c}	Annual average % change
14	+14%	14	+5%
3	+6%	3	+4%
13	+6%	5	+4%
15	+6%	10	+4%
7	+5%	1	+2%
10	+5%	6	+2%
5	+4%	13	+1%
1	+3%	4	positive
11	+1%	9	positive
4	positive	15	0%
9	positive	8	-4%
6	0%	12	-5%
12	0%	7	-7%
8	-4%	11	-9%
2	negative	2	negative

a counter numbers refer to the accompanying map and Table 7 b counters located close to schools are indicated in bold

3 Analysis of manual count data

Of the seven quarterly manual count sites established in 2006 as part of the Cycling Demonstration Towns project, five have continued to be undertaken until 2010 and have therefore been included in this analysis. Counts at The Pentagon and Junction

^c counters located close to other trip attractors (workplaces (sites 5 and 12) and BMX facilities (site 1)) are indicated

of King Street and Queen Street were discontinued in 2009. Seven additional sites were introduced in 2009. Six of the new sites improved the efficacy of the manual count cordon around the city centre and provided additional information in relation to lateral movements across the city and movements to key destinations. The seventh new site (Mackworth Road / Markeaton Street) was introduced in order to improve the monitoring of access to schools. These newer sites have been analysed separately due to the much shorter time series available. The original five sites, indicated on the accompanying map (section 8) are:

- Vernon Street (Friar Gate) (map reference A)
- Mill Hill Lane (map reference B)
- Uttoxeter New Road / Albany Road (map reference C)
- Osmaston Park Road / Victory Road map reference D)
- Willow Row (map reference E)

The seven more recently introduced sites are:

- Wardwick / Curzon Street (map reference F)
- Becket Street (map reference G)
- Ascot Drive / Osmaston Road (map reference H)
- Derby Train Station front entrance (map reference I)
- Derby Train Station rear entrance (map reference J)
- Mackworth Road / Markeaton Street (map reference K)
- Abbey Street (map reference L)

Table 3-1 summarises the data available for each location.

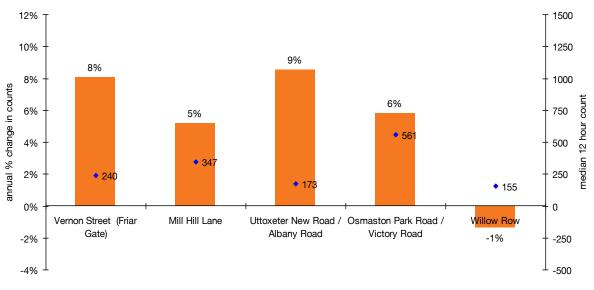
Table 3-1 Data available for Derby manual count sites

	Q3 2006	Q4 2006	Q1 2007	Q2 2007	Q3 2007	Q4 2007	Q1 2008	Q2 2008	Q3 2008	Q4 2008	Q1 2009	Q2 2009	Q3 2009	Q4 2009	Q1 2010	Q2 2010	Q3 2010	Q4 2010
Vernon Street (Friar Gate)	~	•	~	~	•	•	~	~	~	~	~	•	•	х	~	х	х	~
Mill Hill Lane	•	•	~	•	~	•	•	•	•	•	•	•	~	х	>	х	х	~
Uttoxeter New Road / Albany Road	х	•	•	•	•	•	•	•	•	•	•	•	•	х	~	х	х	•
Osmaston Park Road / Victory Road	х	~	~	•	~	•	•	•	•	•	~	~	~	х	>	х	х	•
Willow Row	х	~	•	•	•	~	•	~	•	~	~	~	•	х	>	х	х	~
Wardwick / Curzon Street	х	х	х	х	х	х	х	х	х	х	х	~	~	х	>	х	х	•
Becket Street	х	х	х	Х	х	х	Х	х	х	х	Х	~	~	х	>	х	х	•
Ascot Drive / Osmaston Road	х	х	х	Х	х	х	х	х	х	х	Х	•	•	х	>	х	х	•
Derby Train Station front entrance	х	х	х	х	х	х	х	х	х	х	х	~	~	х	>	х	х	~
Derby Train Station rear entrance	х	Х	х	Х	Х	х	х	х	х	х	Х	•	•	х	>	х	х	•
Mackworth Road / Markeaton Street	х	х	х	х	х	х	х	х	х	х	х	•	•	х	~	х	х	•
Abbey Street	х	х	х	х	х	х	х	х	х	х	Х	•	•	х	>	х	х	•

3.1 Analysis of the five more established count sites

Chart 3-1 below shows the annual percentage change in counts across the programme period for each of the count sites. Combining the counts from the five locations gives an annual percentage change in counts of +9% between quarter 3 of 2006 and quarter 4 of 2010 for Derby⁴.

Chart 3-1 Annual average percentage change in 12 hour manual counts of cyclists performed at five locations in Derby



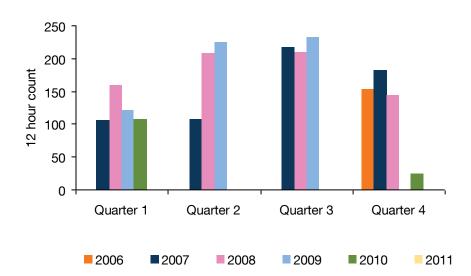
■annual % change in count • median quarterly count

An increase in counts was recorded at four of the sites. A 1% decrease in counts was recorded at Willow Row, although as Chart 3-2 below shows, this is largely due to a very low count in quarter 4 2010 when roadworks were being undertaken in the area. Removing the quarter 4 2010 count from the above analysis gives a +4% increase in counts at Willow Row.

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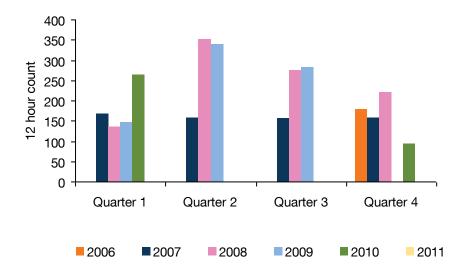
⁴ When comparing the total count at each point in time with counts in the same quarter but different years, there are 21 possible comparisons in Derby, 19 of which are significant differences (16 increases and three decreases).

Chart 3-2 Volumes of cyclists recorded during manual quarterly counts at Willow Row between 2006 and 2011



The Mill Hill Lane site has not increased at as great a rate as three of the other sites. It is possible that this is due to displacement onto a new route recently opened. The growth in cyclists at the Uttoxeter New Road / Albany Road site may be influenced by the opening of the Royal Derby Hospital, although, as shown by Chart 3-3, the main increase in counts was between 2007 and 2008, which predates the relocation of most hospital staff and services to the site in 2009.

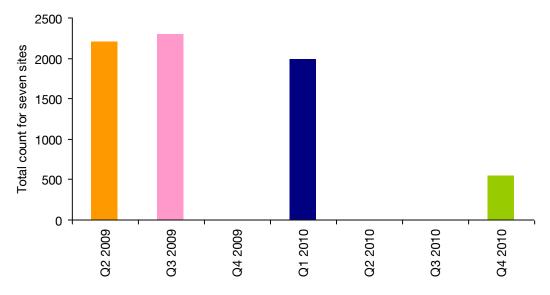
Chart 3-3 Volumes of cyclists recorded during manual quarterly counts at Uttoxeter New Road / Albany Road between 2006 and 2011



3.2 Analysis of the seven newer count sites

Chart 3-4 presents total counts at the seven count sites introduced in 2009 for each of the quarters for which data are available.

Chart 3-4 Total counts recorded at seven sites in Derby



The four periods for which data are available are at different times of the year and so it is not reasonable to compare these figures directly. The counts in quarter 4 of 2010 are likely to have been impacted upon by bad weather and this should not be interpreted as cycling levels in Derby having fallen over this period.

4 Analysis of school related data

Reflecting the emphasis of the Cycling City and Towns programme, Cycle Derby worked extensively with schools, delivering Bikeabilty across the city. Bike It was delivered in 36⁵ schools during the Cycling Demonstration Towns programme and in 42 schools since 2008. A total of 106 Cycle Derby Go Ride clubs have been delivered, and 340 covered parking spaces were installed across 17 infants, junior and primary schools during the Cycling City and Towns programme.

4.1 PLASC

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The percentage of pupils in Derby reporting cycling to be their usual mode of travel to school are summarised in Table 4-1. The proportion of pupils usually cycling to school has increased significantly between 2006/07 and 2010/11 (from 0.9% to 1.9%).

⁵ Department for Transport (2009) 'Making a Cycling Town: a compilation of practitioners experiences from the Cycling Demonstration Towns programme. Qualitative survey 2005-2009'. Department for Transport

Table 4-1 Percentage of pupils surveyed reporting cycling to be their usual mode of travel to school

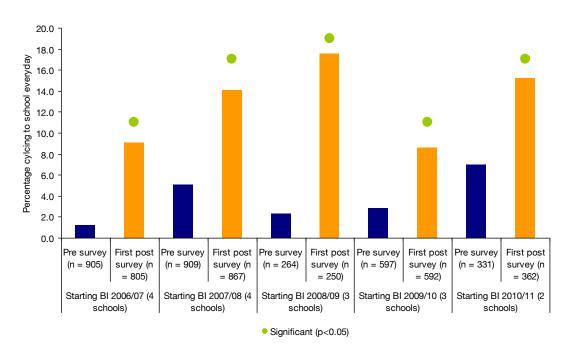
	Academic yea	ar			
	2006/07	2007/08	2008/09	2009/10	2010/11
Primary	0.7%	1.5%	1.8%	1.3%	1.7%*
Secondary	1.1%	1.9%	2.5%	2.6%	2.2%*
All schools ^a	0.9%	1.6%	2.1%	1.8%	1.9%*

^{*} indicates a significant change in cycling in the 2010/2011 academic year compared to the 2006/07 academic year (p<0.05)

4.2 Bike It

Bike It has been delivered in 42 schools in Derby since September 2008. Data are available in the standard format (i.e. pre survey followed by a post intervention survey at the end of the first academic year of engagement) for 16 schools. Aggregated percentages of children cycling everyday for schools starting Bike It in each academic year during the programme are presented in Chart 4-1. The change in the proportion of children surveyed cycling to school everyday between the pre and post survey is significant for schools starting Bike It in all five academic years during the programme period.

Chart 4-1 Proportion of children cycling to school everyday in the pre engagement Bike It survey and the first post-engagement survey



Aggregating together data from all pre intervention and first post intervention surveys performed during the project, the percentage of children surveyed who

^a Based on data from 69 primary and nine secondary schools

cycled to school everyday increased from 3.4% to 12.0% whilst the proportion cycling to school regularly increased from 16.1% to 33.4%⁷. The proportion 'never' cycling to school decreased from 71.0% to 44.1%8. The proportion of children cycling to school on the day of the survey increased from 4.7% to 17.0%9.

For nine schools in Derby, data are available from hands up surveys performed at the end of the second academic year after initial engagement. The proportion cycling to school everyday, regularly and never are presented in Table 4-2. These data suggest that levels of cycling in schools engaged with Bike It are sustained into the years following initial engagement. However, it should be noted that schools may continue to have the support of Bike It officers beyond the first year of Bike It delivery, with some engagement 'at distance'.

Table 4-2 Proportion of children cycling to school everyday, regularly and never before Bike It and at the end of the first and second academic years of engagement

% Cycling to school	Pre survey ^a	First post survey ^b	Second post survey ^c
Everyday	3.1%	13.1%*	12.0%*
Regularly	15.1%	40.8%*	30.4%*
Never	73.0%	37.6%*	42.4%*

Table 4-3 presents levels of cycling to school as recorded by PLASC in schools where Bike It was delivered between 2006 and 2011. In the table below non-Bike It schools are those not engaged in Bike It at any point between 2006 and 2011.

^a pre-Bike It survey (in September of the first academic year of engagement ^b first Bike It survey performed at the end of the first academic year of engagement

[°] second Bike It survey performed at the end of the second academic year of engagement

^{*} results are significantly different to the pre-intervention survey results (p<0.05)

⁶ Significant increase (p<0.05)

⁷ Significant increase (p<0.05)

⁸ Significant decrease (p<0.05)

⁹ Significant increase (p<0.05)

Table 4-3 Comparison of PLASC data from non-Bike It schools and Bike It schools grouped by year of first engagement in Derby

	2007	2008	2009	2010	2011
Non-Bike It schools ^a	1.0%	1.2%	1.8%	1.5%	1.5%
Bike It in 2007 ^{b,f}	0.6%	5.2%	5.2%	4.1%	3.9%
Bike It in 2008 of	0.0%	0.0%	4.1%	0.0%	1.4%
Bike It in 2009 d,f	0.0%	1.3%	0.0%	0.9%	3.6%
Bike It in 2010 of	0.0%	0.0%	0.9%	2.0%	3.8%

^a Data for 56 primary schools and seven secondary schools that were not engaged in Bike It

5 Analysis of counts of parked bicycles

Bike shed counts have been carried out each term at a number of schools in Derby since June 2006 (Tables 5-1 and 5-2). Aggregating the data for all primary schools where bike shed counts were carried out, the number of bicycles counted (expressed as a percentage of the number of pupils attending the schools surveyed) increases from 0.4% in spring 2007 to 2.2% in spring 2011. When aggregating the data for all secondary schools where bike shed counts were carried out, the percentage of pupils bicycles counted increases from 0.7% in spring 2007 to 1.5% in spring 2011.

Table 5-1 Percentage of pupil bicycles counted at Primary Schools in Derby

		2006	2007	2008	2009	2010	2011
Autumn	%	0.5%	3.1%	2.7%	4.1%	3.6%	-
	n	30	56	54	56	56	-
Spring	%	-	0.4%	1.5%	2.1%	2.2%	2.2%
	n	-	30	56	34	56	56

^b Data for five primary schools and one secondary school initially engaged in Bike It in 2007

^c Data for one primary school initially engaged in Bike It in 2008

d Data for two primary schools initially engaged in Bike It in 2009

^e Data for five primary schools initially engaged in Bike It in 2010

^fPLASC data are collected in January. Bike It engages with schools from the beginning of the academic year. For schools starting Bike It in, for example, 2008, the relevant PLASC year is 2009

Table 5-2 Percentage of pupil bicycles counted at Secondary Schools in Derby

		2006	2007	2008	2009	2010	2011
Autumn	%	1.0%	2.3%	3.0%	3.6%	2.2%	-
	n	11	11	11	11	11	-
Spring	%	-	0.7%	1.4%	1.0%	1.9%	1.5%
	n	-	11	11	6	11	11

6 Analysis of casualty data

Cycle user casualty data were derived for Derby from STATS19 collision data. The average number of killed, seriously injured and slightly injured in each year prior to the Cycling Demonstration Towns/Cycling City and Towns programme (2003-2005) are compared to those occurring during the programme (2006-2010) in Table 6-1. Considering all accidents, the difference between the time periods compared is not significant.

Table 6-1 Annual average number of cyclists killed or injured in Derby before (2003-2005) and during (2006-2010) the Cycling Demonstration Towns/Cycling City and Towns programme

	Annual avera	Annual average number of casualties								
	Killed	Killed Seriously injured Slightly injured To								
Pre-programme (2003-2005)	1.3	12.7	80.0	94.0						
During programme (2006-2010)	0.2	18.8	87.2	106.2						

^{*} significant change between the pre-programme and during programme figures (p<0.05)

Analysis of automatic count data collected in Derby indicates that growth in levels occurred from 2007 onwards, following a decline relative to the baseline year in 2006. Casualty data from 2003-2006 and 2007-2010 are compared in Table 6-2. Comparing casualties recorded during the period of the programme when the greatest growth in cycling (based on automatic cycle counter data) was observed to casualties recorded before the levels of cycling increased substantially indicates no significant difference in accidents between the two periods of time.

Table 6-2 Annual average number of cyclists killed or injured in Derby before (2003-2006) and during (2007-2010) the Cycling Demonstration Towns/Cycling City and Towns programme

	Annual avera	Annual average number of casualties								
	Killed	Killed Seriously injured Slightly injured								
Pre-programme (2003-2006)	1.0	13.8	77.8	92.5						
During programme (2007-2010)	0.3	19.3	91.3	110.8						

^{*} significant change between the pre-programme and during programme figures (p<0.05)

7 Analysis of physical activity data and awareness of campaign

7.1 Household level surveys of physical activity

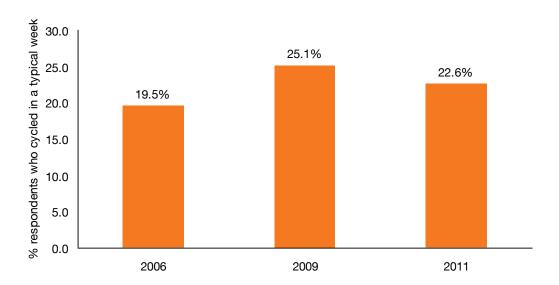
Household level surveys of physical activity were performed in Derby in 2006, 2009 and 2011. A representative quota sample of residents were surveyed by telephone in March/early April each year. The core of the questionnaire was the physical activity measure taken from the European Prospective Investigation into Cancer (EPIC) study¹⁰, the responses to which are used to create four categories: inactive, moderately inactive, moderately active and active. Those respondents stating that they had done some cycling in the past year were asked more detailed questions about their cycling frequency, duration and purpose. In the 2009 survey, additional questions were added asking about awareness of publicity about cycling in general (unprompted awareness) and the Cycling Demonstration Towns programme in particular (prompted recall).

7.1.1 Any cycling in a typical week

The proportion of respondents doing any cycling in a typical week was obtained from the EPIC question, in which respondents were asked about cycling in a typical week, alongside other types of activity. In 2006, 19.5% of respondents said they cycled in a typical week. By 2009 this figure had increased significantly (p<0.05) to 25.1%. The 2011 survey found 22.6% of respondents to do some cycling in a typical week. Although this is lower than the interim survey, it is significantly greater (p<0.05) than the 2006 baseline.

¹⁰ Wareham NJ, Jakes RW, Rennie KL, Schuit J, Mitchell J, HenningsS and Day NE. Validity and repeatability of a simple index derived from the short physical activity questionnaire used in the European Prospective Investigation into Cancer and Nutrition (EPIC) study. Public Health Nutr. 2003 Jun;6(4):407-13.

Chart 7-1 Percentage of survey respondents in Derby doing some cycling in a typical week



7.1.2 Self-assessment

Respondents were asked to pick a statement that best described them as a cyclist, from: "new to cycling"; "starting to cycle again"; "an occasional cyclist"; "a regular cyclist". In 2006, 18.4% said they were a cyclist (of some type); by 2009 this figure had increased to 24.9%, dropping to 22.3% by 2011. These increases were both statistically significant compared to 2006 (p<0.05). In each survey year, around 1-4% of cyclists said they were 'new to cycling'.

7.1.3 Levels of physical activity

The EPIC questionnaire was used to place people into categories of overall physical activity (including cycling). The key indicator of interest for physical activity is the proportion in the 'inactive' category, as this is the category with the highest risk of premature mortality. Increasing cycling in this population (and reducing the proportion classed as inactive) would have tangible public health benefits. In 2006, 29.9% were classed as inactive. By 2009 this reduced to 26.2% (p<0.05) and by 2011 it remained static at 26.3%.

7.1.4 Awareness of campaign activity

In the 2011 iteration of the survey, 32% of respondents to the reported to have seen or heard some publicity in the town about a programme promoting cycling. In 2011, 50% of respondents recalled the name of the programme (Cycle Derby) when prompted; this was recalled by 36% in 2009. The components of the programme with the highest levels of awareness in 2011 were general publicity about cycling and promotion in schools/active travel.

Those who were aware of the programme were asked what they thought about it, using a set of statements. A number of the statements presented positive views

about the CDT programme. Table 7-1 shows the proportion of people who agreed with these positive statements.

Table 7-1 Percentage of survey respondents in Derby agreeing with positive statements about the programme

	% agree strongly or tend to agree
The campaign made me think about cycling	52%
The campaign made me want to cycle more	34%
The campaign made me give cycling a try	22%
The campaign helped me see cyclists' point of view rather than drivers'	54%

This shows that whilst around half of the respondents thought the 'campaign' had helped them think about cycling, only 22%-34% considered converting this into action.

A number of the statements presented more negative views about the programme. Table 7-2 shows the proportion of people who disagreed with these negative statements, and indicates high levels of support for local authority spending on the Cycling Demonstration Towns/Cycling City and Towns programme in Derby.

Table 7-2 Percentage of survey respondents in Derby disagreeing with negative statements about the programme

	% disagree strongly or tend to disagree
The campaign didn't tell me anything new	32%
I didn't take much notice of the campaign	26%
The local authority should not be spending money on cycling	74%

7.2 Active People Survey

In Derby there was a small (non-significant) increase in the proportion of respondents cycling once or more per month between 2005/6 and 2010/11 (from 11.0% to 11.1%) The proportion cycling 12 or more times per month decreased by 1.3%-points (from 2.9% to 1.6%) over the same period. This change was not significant.

8 Maps

The following pages contain maps indicating the location of manual count and automatic cycle counter locations, and the estimated change in volumes of cycles recorded at these sites.

