

Outcomes of the Cycling Demonstration Towns programme: monitoring project report

Individual town results: Darlington

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1 Introduction

1.1 Description of the Cycling City and Towns programme in Darlington

In 2005 Darlington was selected to be a Cycling Demonstration Town, shortly following its selection in 2004 to be one of the three English Sustainable Travel Towns. The Sustainable Travel Town (STT) programme aimed to encourage more people to walk, cycle and use buses for the journeys they make. The Local Motion brand was created for a programme of smarter choice measures funded by the two funding streams. Due to the relatively low levels of cycling at the start of the programmes, Local Motion focused on new and returning cyclists although the particular focus during 2005-2008 was on children and families. Cycling Demonstration Town funding was invested predominantly in infrastructure. An additional 22km of cycle routes were installed, creating radial routes into Darlington, and 13 toucan crossings were added¹. The radial routes were signed, using times rather than distances, and branded using colours. The programme also included intensive support for schools, personalised travel planning for local residents, cycle training, a bicycle hire scheme and promotion through the Local Motion brand. The total spend of the initial Cycling Demonstration Towns programme was £2.6 million, of which £2.3 million was capital investment and £0.3 million revenue.

The emphasis of the Cycling City and Towns phase of the programme in Darlington was to further develop the cycling network, with a focus upon health, women and workplaces.

Infrastructure improvements have seen the completion and signage of a circular route and six radial routes, and further improvements in the network linking to outlying areas². As part of the Cycling City and Towns programme, 11 toucan crossings, 19 advanced stop lines and 10.9km of on- and off-road cycle routes have been provided. Cycle parking has been improved, particularly at schools and colleges, with an additional 680 spaces having been installed between 2008 and 2011.

Smarter measures introduced in Darlington have included a variety of approaches to increase awareness of local cycling facilities and to encourage cycling. Workplace engagement involved workplace cycle challenges which attracted 780 individual participants in 2009 and 2010. Events proved particularly popular. The cycling festival, run for the first time in 2005, attracted approximately 4,000 members of the public in 2010. Whilst some of the cycle training targeted adults, the main focus was children. During the period from September 2008 to March 2011, 3,648 individuals received Bikeability training. Bike It was also delivered in up to 19 schools in the area in each year of the programme.

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

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.

² Darlington Borough Council (2011) Darlington Cycling Town 2008-2011, Darlington Borough Council. Available at <https://www.gov.uk/government/publications/cycling-england-cycling-city-and-towns-end-of-programme-reports> [Accessed 31 May 2012]

revenue expenditure. Details of expenditure in Darlington during the Cycling Demonstration Town and Cycling City and towns programme are summarised in Table 1-1.

Table 1-1 Funds invested in cycling in Darlington

	2005-2008 Revenue	2005-2008 capital	2008-2011 revenue	2008-2011 capital
Total	£319,800	£2,290,580	£845,326	£2,507,633

1.3 Summary of available monitoring data

The following data sources are available:

- Data from 19 automatic cycle counters
- 12 hour manual counts performed in alternate quarters since 2006 at 12 locations
- Pupil Level Annual School Census (PLASC) travel data, monitoring data from Bike It and local authority hands up data
- travel to school data from local authority hands-up surveys
- 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 continued growth in levels of cycling over time from a relatively low initial baseline, albeit at a slower rate in the second phase of the programme than in the first

The most complete data sets, time series data from automatic cycle counters located predominantly on traffic-free cycle routes, indicate a growth in cycling through the second phase of the programme, although at a slower rate than during the first phase and with some variation across the town. There is evidence of growth on the key radial routes into Darlington, the focus of infrastructure developments during the programme. Volumes of cyclists accessing the town centre, as monitored by a manual count cordon, have increased over the programme period. Notwithstanding the limitations of the data source, levels of cycling to primary and secondary schools appear to have increased over time. Schools engaged in Bike It have seen significant increases in the proportions of children cycling to school regularly.

- Automatic cycle counter data indicate an increase in volumes of cycles counted of +59% against a 2005 baseline. Based on data from 19 automatic cycle counters, this estimated growth corresponds to an increase from 946 trips per day counted in 2005 to 1,503 in 2011
- An increase was observed at 12 of the automatic cycle count sites, a decrease at five and no change was observed at the remaining two locations
- Analysis of manual count data collected across 12 locations indicates an annual average increase of +0.3%
- Local authority hands-up survey data indicate an increase in those that cycle to school from 0.9% to 7.4% between 2005 and 2011

- Across all schools, the percentage of children cycling to school as measured by PLASC was 3.3% in 2010/11 compared to 2.7% in 2006/07
- Bike It data indicate an increase in children cycling to school on the day of the survey from 6.1% in pre surveys to 10.6% in post surveys, and an increase in children cycling to school everyday from 4.9% in pre surveys to 8.8% in post surveys
- Compared to pre-programme data, the average total number of cycling casualties did not change significantly during the Cycling City and Town programme
- The household level survey of physical activity found that in 2006, 21.3% of respondents cycled in a typical week. This increased to 22.5% in 2009 and was 21.5% in 2011
- Active People Survey data indicate a significant increase in Darlington in the proportion of respondents cycling once or more per month and a significant decrease in the proportion cycling 12 or more times per month between 2005/6 and 2010/11

2 Analysis of automatic cycle counter data

Data from a total of 19 automatic cycle counters have been analysed. In the following sections information regarding the location, volumes of cyclists recorded and change in volumes of cyclists recorded over time are presented for each location. The majority of cycle counters are located to the north and west of the town centre, with a small proportion located in the east. Four of the 19 count sites were installed in 2004, one in 2005, 12 in 2006, and two in 2008. In order to be consistent across the Cycling Demonstration Towns, data from 2005 onwards are included in the analysis.

Two distinct sets of analysis have been undertaken using cycle counter data in Darlington. 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. In the second, 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 initial Cycling Demonstration Towns phase, an increase in counts of cyclists of +57% 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 Darlington at the end of the Cycling Demonstration Towns period (2009) relative to a 2005 baseline (baseline = 1005)

	2005	2006	2007	2008	2009
Change against 2005 baseline	100%	122%*	137%*	150%*	157%*

* indicates a significant difference ($p < 0.05$) compared to the 2005 baseline

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

covers both phases of the programme. Minor differences for the estimated change against the 2005 baseline for the years corresponding to the initial Cycling Demonstration Towns period are the result of adjustments made to the model following the inclusion of additional count data in the time series analysed.

Table 2-2 Change in cycle count in Darlington at the end of the Cycling City and Towns period (2011) relative to a 2005 baseline (baseline = 100%)

	2005	2006	2007	2008	2009	2010	2011
Change against 2005 baseline	100%	121%*	136%*	149%*	151%*	139%*	159%*

* indicates a significant difference ($p < 0.05$) compared to the 2005 baseline

2010 is the only year in which cycle counts decreased compared to the previous year. In order to explore whether this was due to 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 2-3 presents the percentage change in cycle counts relative to a 2005 baseline when periods of heavy snow are included in the regression model.

Table 2-3 Change in cycle count in Darlington at the end of the Cycling City and Towns period relative to a 2005 baseline including an adjustment for snow (baseline = 100%)

	2005	2006	2007	2008	2009	2010	2011
Change against 2005 baseline	100%	121%*	135%*	148%*	154%*	153%*	158%*

* indicates a significant difference ($p < 0.05$) compared to the 2005 baseline

The analysis reported in Table 2-4 compares cycling levels in 2011 to a 2007 baseline in order to focus on changes occurring during the Cycling City and Towns phase of the programme.

Table 2-4 Change in cycle count in Darlington at the end of the Cycling City and Towns period relative to a 2007 baseline (baseline = 100%)

	2007	2008	2009	2010	2011
Change against 2007 baseline	100%	109%*	110%*	102%*	117%*

* 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 +57% change in cycles counted across Darlington against a 2005 baseline. Although the growth achieved during the first phase of the programme has continued during the second phase of the programme, it has been at a slower rate.

2.2 Sensitivity analysis

Inspection of data for the individual counters indicates a particularly notable increase in the volumes of cyclists recorded by a counter located on Yarm Road

adjacent to Cummins (Table 2-7, site 14). There has been consistent growth at this site since 2005 (Chart 2-1 below), with an annual average change of +13% based on weekday data and +9% based on weekend day data. Data from this site is therefore anticipated to have a substantial impact on the overall change in cycling levels as estimated from the collective analysis of data across all counters. In order to explore this, the analysis reported above was repeated without the data from this counter (Table 2-5).

This analysis indicates the strong influence of this particular counter on the overall estimated change in cycling levels in Darlington. Nevertheless, exclusion of the Yarm Road (site 14) counter still gives a substantial overall increase of +36% against a 2005 baseline compared to +59% when data from this site is included³.

Chart 2-1 Daily counts recorded by the automatic cycle counter on Yarm Road adjacent to Cummins

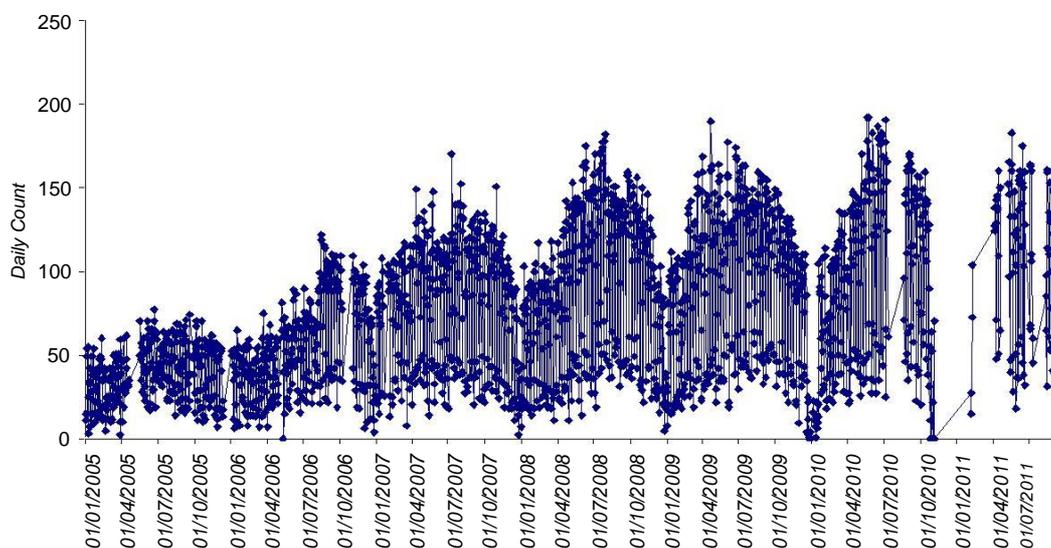


Table 2-5 Change in cycle count in Darlington at the end of the Cycling City and Towns period relative to a 2005 baseline (excluding data from the count site on Yarm Road adjacent to Cummins, baseline = 100%)

	2005	2006	2007	2008	2009	2010	2011
Change against 2005 baseline	100%	108%*	116%*	128%*	129%*	119%*	136%*

* indicates a significant difference ($p < 0.05$) compared to the 2005 baseline

2.3 Analysis of data from individual counter 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 2-6 and alongside more detailed information for each counter in Table 2-7. Sufficient data are available to robustly estimate the

³ There is no particular reason to exclude the Yarm Road (site 14) counter from the calculation of the headline figure for cycling growth in Darlington – that is, we have no reason to suppose that the pattern of use of the cycle path at this location is anomalous

annual percentage change in the number of cyclists counted for 17 of the 19 automatic cycle counters. Based on the more limited data available, change over time is positive for the remaining two count sites.

Table 2-6 Summary of findings of detailed analysis of data from individual count sites

Number of counters for which data are available	19
Number of counters for which sufficient data are available to quantify change over time ⁴	17
Number of counters with quantifiable increase	10
Number of counter with no change	2
Number of counter with quantifiable decrease	5

In the following table counters are ordered by their location relative to the centre of Darlington, starting with those located closest to the town centre. Map references refer to the accompanying map (section 7).

⁴ None of the changes were statistically significant.

Table 2-7 Description of automatic cycle counters in Darlington

Map reference	Location	Time period	Annual change ^b	Average daily count in 2010	Comments
1.	St Cuthbert's Way	2006-2011	Weekday: +2% Sat/Sun: -6%	Overall: 79 Weekdays: 92 Weekend days: 54	Located on a traffic-free segregated cycle path adjacent to the dual carriageway A167 St Cuthbert's Way and riverside, in the centre of Darlington.
2.	Grasmere Road (Adjacent Dodmire School)	2005-2011	Weekday: +6% Sat/Sun: +6%	Overall: 89 Weekdays: 107 Weekend days: 70	Located on a traffic-free segregated cycle route between houses and a school. It is approximately three quarters of a mile east, south-east of the centre of Darlington. Weekday counts show peaks during 'commuting' periods.
3.	Haughton Road (Adjacent college)	2006-2011	Weekday: -4% Sat/Sun: -2%	Overall: 54 Weekdays: 65 Weekend days: 31	Located on National Route 14 of the National Cycle Network, a traffic-free segregated cycle lane adjacent to Haughton Road, approximately three quarters of a mile north-east of the centre of Darlington. A college site is nearby. Weekday counts show 'commuting' peaks.
4.	Haughton Road (opposite college)	2006-2011	Weekday: +11% Sat/Sun: +8%	Overall: 118 Weekdays: 146 Weekend days: 78	
5.	Darlington to Middleton Railway Path (Hundens Park)	2008-2011	Positive	Overall: 76 Weekdays: 90 Weekend days: 41	Located on a shared use traffic free path adjacent to B6279 near to Hundens Park and industrial areas, approximately one mile north east of the centre of Darlington.
6.	Haughton Road (Park Cycle Route)	2007-2011	Weekday: +1% Sat/Sun: +1%	Overall: 184 Weekdays: 223 Weekend days: 123	Located on a traffic-free shared use route next to the River Skerne in urban green space approximately one and a half miles north-east of the centre of Darlington. Weekday counts show 'commuting' peaks.
7.	Skerne River Route	2007-2011	Weekday: -2% Sat/Sun: -5%	Overall: 48 Weekdays: 59 Weekend days: 34	Located on a traffic-free shared use route next to the River Skerne in urban green space approximately one and a quarter miles north-east of the centre of Darlington. Weekday counts show 'commuting' peaks.
8.	McMullen Road (Lingfield Point – North End)	2006-2011	Weekday: +5% Sat/Sun: +3%	Overall: 160 Weekdays: 210 Weekend days: 74	Located on a traffic-free shared use path adjacent to McMullen Road in Lingfield, approximately one and a quarter miles east of the centre of Darlington. Industrial estates and a business park are nearby. Weekday counts show 'commuting' peaks.
9.	McMullen Road (Lingfield Point – South End)	2006-2011	Weekday: +7% Sat/Sun: +2%	Overall: 205 Weekdays: 251 Weekend days: 80	

10.	Honeypot Lane	2006-2011	Weekday: +8% Sat/Sun: +9%	Overall: 173 Weekdays: 190 Weekend days: 128	Located on a traffic-free railway path adjacent to a cycle playground in Rise Carr, approximately one and a half miles north, north-west of the centre of Darlington. Weekday counts show 'school' peaks.
11.	Whessoe Road	2005-2011	Weekday: -3% Sat/Sun: +4%	Overall: 27 Weekdays: 27 Weekend days: 29	Located on a traffic-free shared use cycle path around the edge of a recreation ground. It is in Rise Carr, approximately one and a half miles north of the centre of Darlington.
12.	Cemetery Lane	2007-2011	Weekday: -1% Sat/Sun: 0%	Overall: 22 Weekdays: 22 Weekend days: 22	Located on a traffic-free cycle path adjacent to a cemetery, approximately one and a quarter miles west of the centre of Darlington. A secondary school is located at the head of the path.
13.	West Auckland Road	2005-2011	Weekday: +5% Sat/Sun: +10%	Overall: 74 Weekdays: 88 Weekend days: 55	Located on a traffic-free segregated path adjacent to A68 West Auckland Road Faverdale, approximately one and a half miles north-west of the centre of Darlington. Weekday counts show 'school commuting' peaks.
14.	Yarm Road (Adjacent Cummins)	2005-2011	Weekday: +13% Sat/Sun: +9%	Overall: 98 Weekdays: 120 Weekend days: 39	Located on a traffic-free shared use route adjacent to B6280 Yarm Road, close to Yarm Road industrial estate. The site is approximately one and three quarter miles east of the centre of Darlington. Weekday counts show 'commuting' peaks.
15.	Yarm Road (Opposite Cummins)	2006-2011	Weekday: +2% Sat/Sun: +1%	Overall: 24 Weekdays: 27 Weekend days: 16	
16.	Nunnery Lane	2006-2011	Weekday: +14% Sat/Sun: +8%	Overall: 23 Weekdays: 22 Weekend days: 25	Located on a traffic-free shared use path in a green corridor within an urban area approximately one and three quarter miles west of the centre of Darlington.
17.	Whinfield Road	2006-2011	Weekday: -2% Sat/Sun: -4%	Overall: 159 Weekdays: 175 Weekend days: 121	Located on a traffic-free path in the grounds of a school in Whinfield, approximately two miles north-east of the centre of Darlington. Weekday counts show 'school commuting' peaks.
18.	Darlington to Middleton Railway Path (west of A66 bridge)	2008-2011	Positive	Overall: 23 Weekdays: 21 Weekend days: 24	Located on a shared use traffic free path adjacent to B6279 on the edge of town, approximately one and three quarter miles north east of the centre of Darlington.
19.	Hurworth to Neasham	2006-2011	Weekday: -9% Sat/Sun: -7%	Overall: 11 Weekdays: 9 Weekend days: 18	Located on Neasham Road in a largely rural area between Darlington and Neasham, approximately two and a half miles south-east of the centre of Darlington.

^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

2.4 Relationship between programme activity and automatic count data

2.4.1 Radial routes and the circular route

The focus of investment in infrastructure in Darlington has been on the completion of radial routes and to add to the network of cycle routes linking surrounding villages to the town centre. Six fully signed routes, using traffic-free cycle routes and quiet residential streets, run from the edge of the town to the town centre. A circular route runs around the town connecting these radial routes. Several automatic cycle counters monitor movement on these routes (Map 2-1):

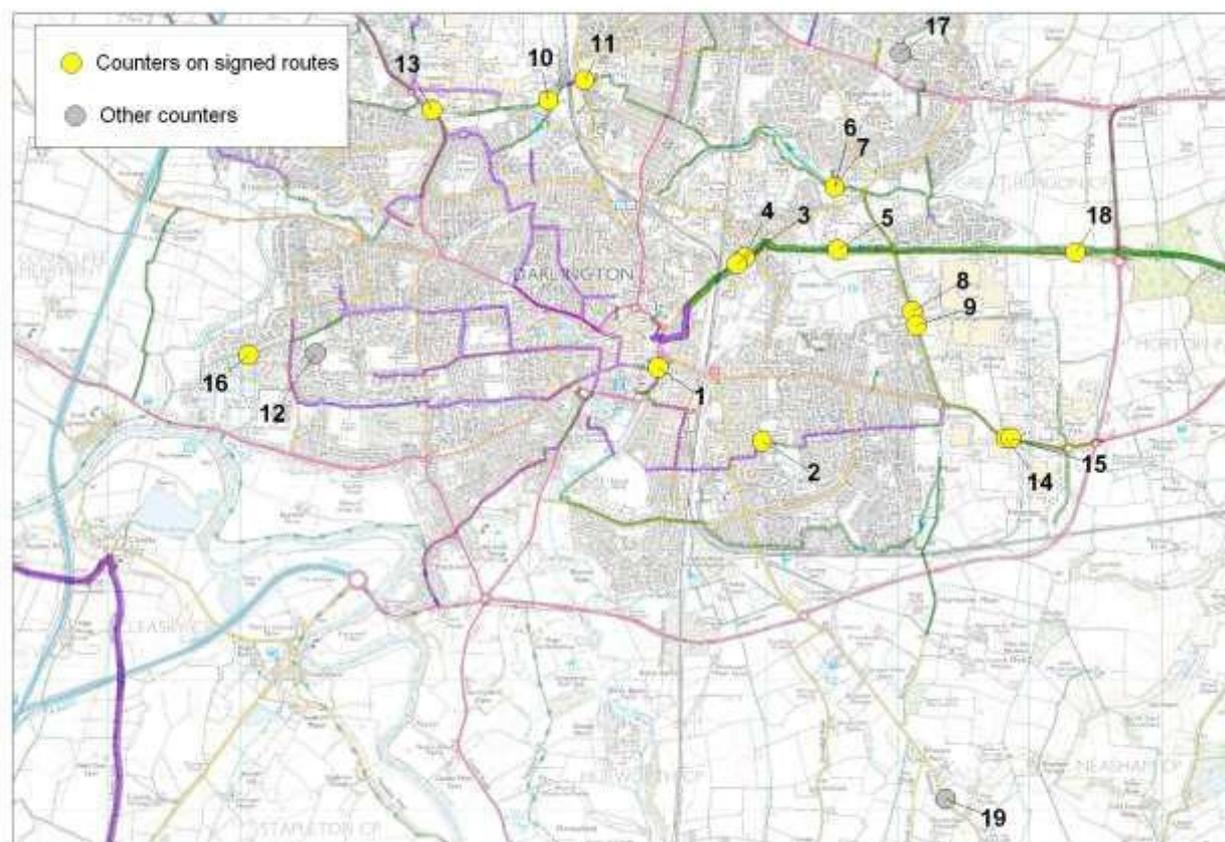
Radial Routes

- St Cuthbert's Way (map reference 1)
- Grasmere Road adjacent to Dodmire School (map reference 2)
- Haughton Road (adjacent to college) (map reference 3)
- Haughton Road (opposite college) (map reference 4)
- Darlington to Middleton Railway Path (Hundens Park) (map reference 5)
- West Auckland Road (map reference 13)
- Yarm Road (adjacent to Cummins) (map reference 14)
- Yarm Road (opposite Cummins) (map reference 15)
- Nunnery Lane (map reference 16)
- Darlington to Middleton Railway Path (west of A66 bridge) (map reference 18)

Circular Route

- Haughton Road – Park Cycle Route (map reference 6)
- McMullen Road (Lingfield Point, north end) (map reference 8)
- Skerne River route (map reference 7)
- McMullen Road (Lingfield Point, south end) (map reference 9)
- Honeypot Lane (map reference 10)
- Whessoe Road (map reference 11)

Map 2-1 Automatic cycle counters and manual count locations and their proximity to signed routes in Darlington



Counters located on the various routes differ in the growth observed over the period for which data are held (Table 2-8).

Table 2-8 Average annual change in daily count of cyclists recorded on key routes in Darlington

Route	Number of counters	Range of annual average percentage change
Radial Routes	10	-4% to +13%
Circular Route	6	-1% to +10%
Other counters	3	-8% to -1%

An aggregated analysis of counter data has been performed for counters on radial routes, on the circular route and on other routes (Table 2-9). The analysis has been performed using a 2007 baseline in order to ensure that sufficient data is available for all of the groups of counters analysed.

Table 2-9 Change in cycle count on the circular and radial routes in Darlington at the end of the Cycling City and Towns period relative to a 2007 baseline (baseline = 100%)

		2007	2008	2009	2010	2011
Change against 2007 baseline	Radial Routes	100%	110%*	115%*	109%*	124%*
	Circular Route	100%	114%*	115%*	105%*	125%*
	All counters on radial routes or the circular route	100%	111%*	115%*	107%*	124%*
	Counters not the radial or circular routes ^a	100%	100%	94%*	82%*	94%*
	All counters in Darlington	100%	109%*	110%*	102%*	117%*

*indicates a significant difference ($p < 0.05$) compared to the 2007 baseline

^a includes three counters, two of which are further from the centre of Darlington than any other counters used in the analysis

Where sufficient data are available, aggregated analysis of data from several count locations on a single route suggests a similar growth in cyclists recorded on the radial routes and the circular route. Levels of cycling on two of the routes into Darlington, from the north east (map references 3, 4, 5 and 18) and the south east (map references 2, 14 and 15) have increased by 23% in 2011 compared to 2007. Collective analysis of data collected across all of the newly completed routes indicates an uplift of +24% against a 2007 baseline compared to +17% for all counters in Darlington against the same baseline.

2.4.2 Further and higher education

During the Cycling City and Towns programme cycle lockers were installed at the Darlington College campus. During 2009 a number of information events were delivered to staff and students, and cycle maps and self-guide cycle packs were supplied to the college. In September 2010, the University of Teeside established a temporary campus on the site of a former secondary school. Counters located on Houghton Road, one opposite (map reference 4) and one adjacent (map reference 3) to the college, monitor movement of cyclists close to these sites (Map 2-2).

Map 2-2 Automatic cycle counters monitoring access to Darlington College (site references refer to Table 2-7)



Chart 2-2 Median daily count of cyclists recorded on Haughton Road opposite and adjacent to Darlington College on weekdays and weekend days

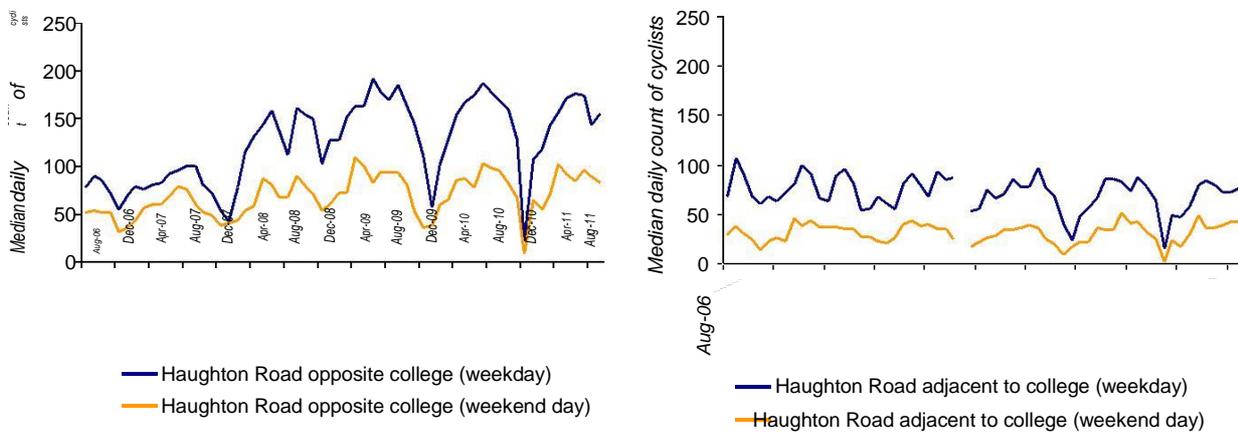
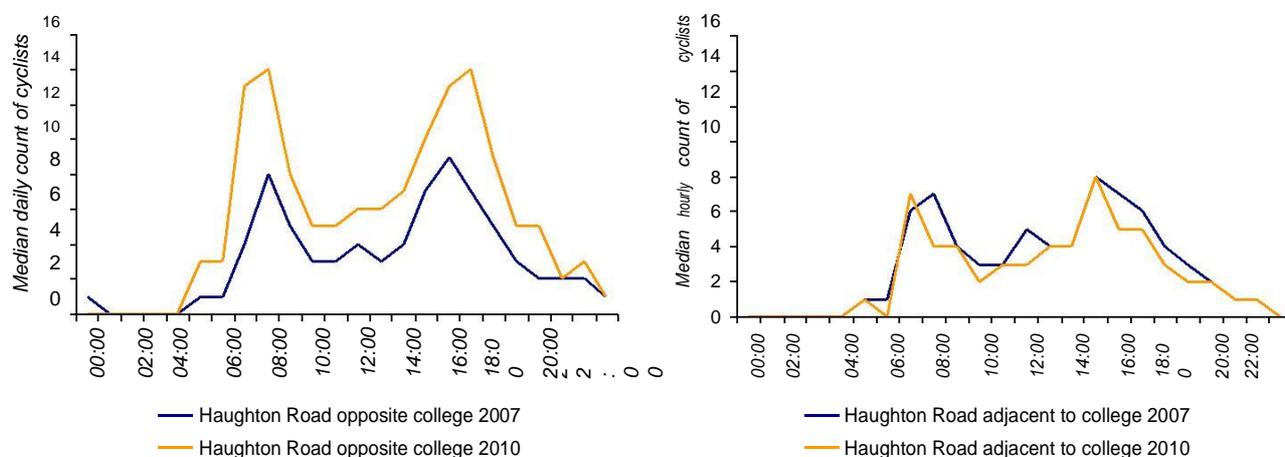


Chart 2-2 indicates an increase in counts recorded at the site opposite the college in 2008. This coincides with the completion of a new road and cycle path nearby. Greater volumes of cyclists are recorded at the site opposite the college compared to the site adjacent to the college (Chart 2-2). The average count per hour recorded in these locations on weekdays and weekend days in 2007 and 2010 is presented in Chart 2-3.

Chart 2-3 Median count per hour recorded on Houghton Road opposite and adjacent to Darlington College on weekdays and weekend days



The hourly distribution of counts show peaks in use at the times of day associated with commuting to college at both locations; however an increase in volumes over time is evident only in data from the counter opposite the college site.

3 Analysis of manual count data

Quarterly 12 hour manual counts have been undertaken at twelve locations since quarter 2 of 2006. No counts were undertaken in quarter 1 of 2007 or quarters 2 and 3 of 2009, but otherwise the data are complete up until quarter 3 of 2010. The sites form a partial cordon around the centre of Darlington. The locations of the sites, indicated in the accompanying map (section 7) are as follows:

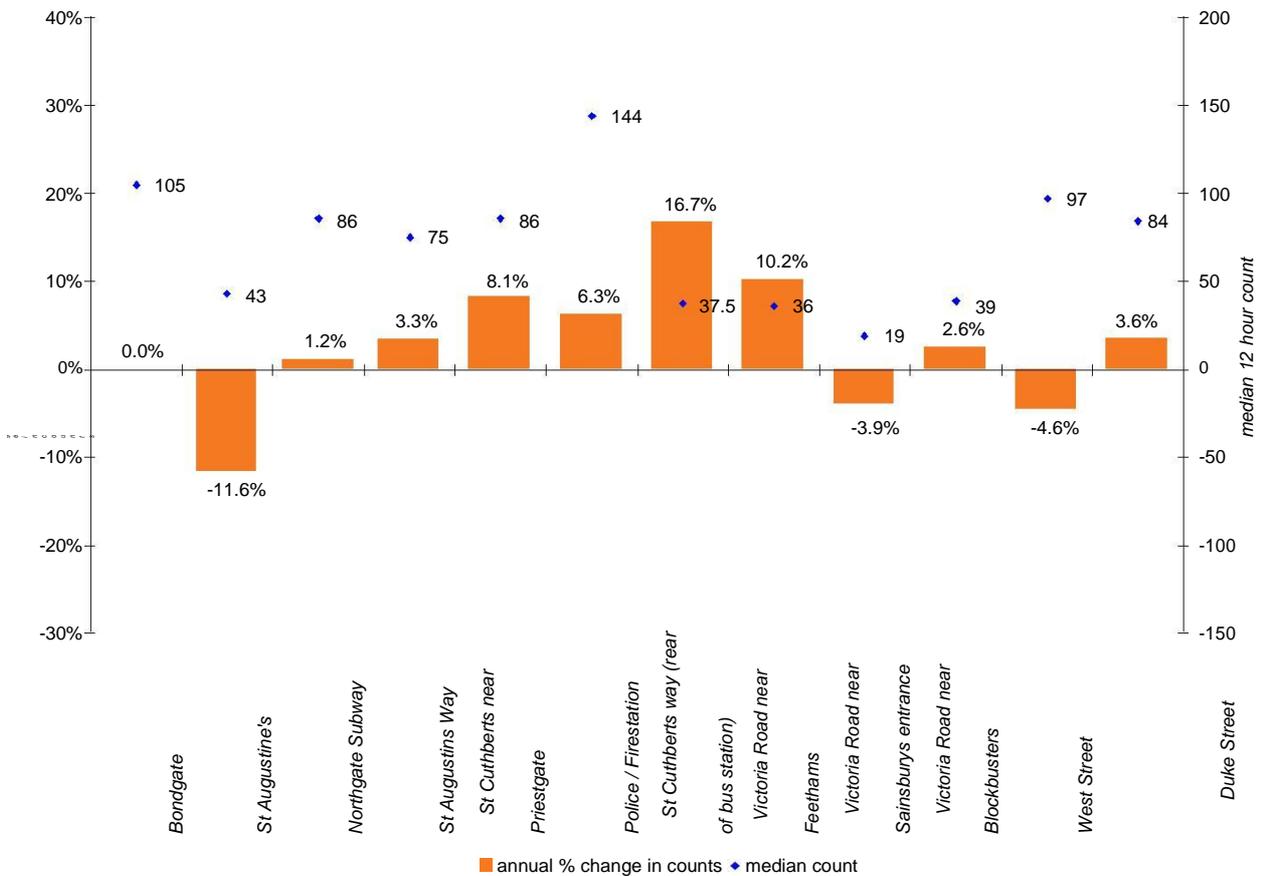
- Bondgate (map reference A)
- St. Augustine’s (map reference B)
- Northgate Subway (map reference C)
- St. Augustine’s Way (map reference D)
- St. Cuthbert’s near Priestgate (map reference E)
- Police / Firestation (map reference F)
- St. Cuthbert’s way, rear of bus station (map reference G)
- Victoria Road near Feethams (map reference H)
- Victoria Road near Sainsburys’ entrance (map reference I)
- Victoria Road near Blockbusters (map reference J)
- West Street⁵ (map reference K)
- Duke Street (map reference L)

Combining the counts from all twelve locations gives an annual percentage change of +0.3%⁶. Median 12 hour counts of cyclists and annual average percentage change are presented in Chart 3-1 based on data collected between quarter 3 2006 and quarter 3 2010 but excluding those quarter 1 2007 and the second and third quarters of 2009. For these time periods data were not available disaggregated by individual site.

⁵ The position of this count site was changed in quarter 3 2006 so that it was inconsistent with the count in quarter 2 2006.

⁶ When comparing the total count at each point in time with counts in the same quarter but different years, there are 45 possible comparisons in Darlington, 26 of which are significant differences (17 increases and nine decreases).

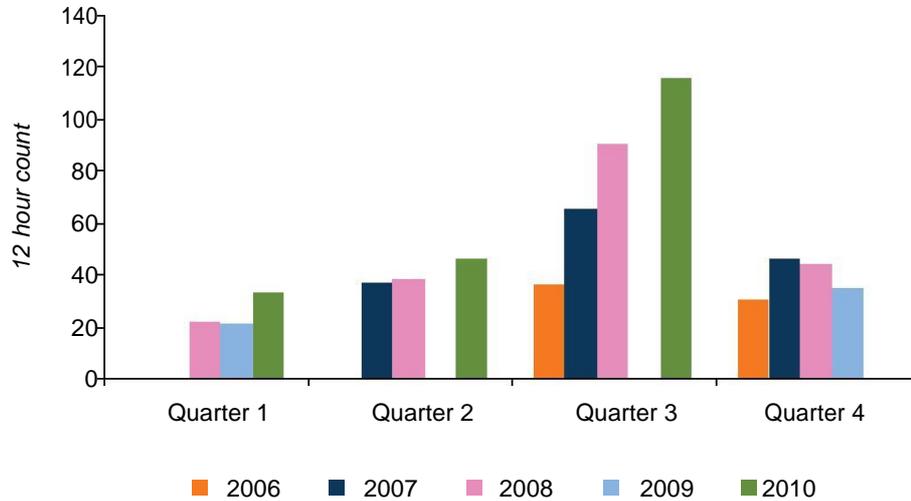
Chart 3-1 Annual average percentage change in 12 hour manual counts of cyclists performed at twelve locations in Darlington⁷



The largest increase in counts has been observed on St.Cuthbert's Way, although the comparatively low median count recorded at this site suggests that it is not one of most popular routes into the town. Chart 3-2 demonstrates that much of this increase occurs in the quarter 3 counts.

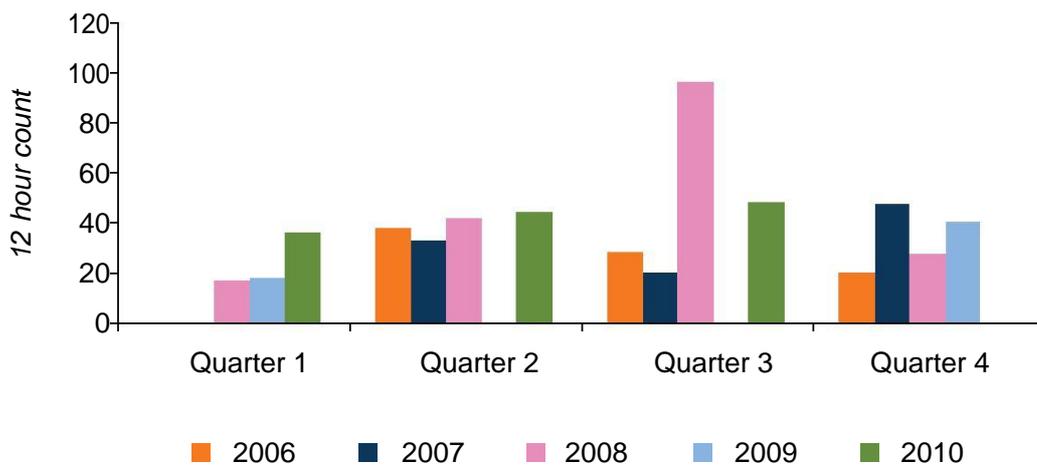
⁷ All available data from quarter 2 2006 has been used for all sites except West Street where data from quarter 3 2006 onwards has been used as quarter 2 2006 was not consistent with later data.

Chart 3-2 Volumes of cyclists recorded during manual quarterly counts at St. Cuthbert's Way (rear of bus station) between 2006 and 2010



A substantial uplift in counts was recorded at Victoria Road near Feethams over the programme period. This site does not show a consistent pattern of growth, however, as Chart 3-3 below shows. Removing the much higher count in quarter 3 of 2008 increases the annual percentage change for this site from 10.2% to 10.4%.

Chart 3-3 Volumes of cyclists recorded during manual quarterly counts at Victoria Road near Feethams between 2006 and 2010



Decreases in counts were observed at St. Augustine’s and Victoria Road near Sainsburys’ entrance between 2006 and 2011. Underlying this is a somewhat mixed picture for St. Augustine’s, as can be seen in Chart 3-4.

Chart 3-4 Volumes of cyclists recorded during manual quarterly counts at St. Augustine’s between 2006 and 2010

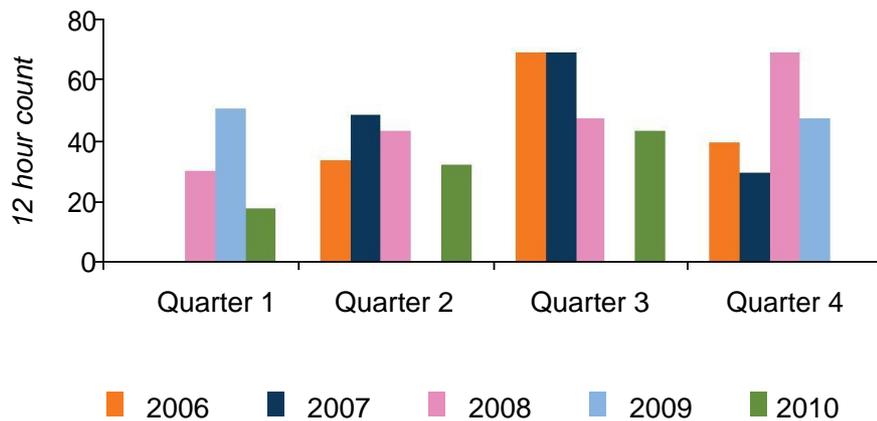


Chart 3-4 shows a decrease in counts in quarter 3, but some evidence of an increase prior to a decrease in the other three quarters.

4 Analysis of school related data

During the Cycling City and Towns programme, the Darlington project has engaged with ‘Partner Schools’ to encourage cycling amongst parents, students and staff. Bike It was delivered in 21⁸ schools during the Cycling Demonstration Towns part of the programme and in up to 19 schools each year⁹ since 2008. A total of 3,686 individuals have received Bikeability training between September 2008 and March 2011. Between June 2008 and March 2011 an additional 601 cycle parking spaces have been installed.

Biannual campaigns to promote sustainable travel to school children have rewarded pupils for travelling to school in active and sustainable ways. Engagement in these campaigns has grown over the course of the programme with 5,100 participating in May 2010, representing over 65% of all primary school pupils in Darlington.

4.1 Hands-Up Survey

In 2011, 12,072 pupils from all schools in Darlington (excluding some of the independent schools) took part in the ‘Hands-Up’ survey that asked children “how did you travel to school today?” and “how would you like to travel to school?”. Cycling has increased overall in the period 2005 to 2011, from 0.9% to 7.4% (Table 4-1). Increases have been observed at both primary and secondary schools, although a slightly greater increase has been observed in primary schools.

⁸ 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

⁹ Darlington Borough Council (2011) Darlington Cycling Town 2008-2011, Darlington Borough Council. Available at <https://www.gov.uk/government/publications/cycling-england-cycling-city-and-towns-end-of-programme-reports> [Accessed 31 May 2012]

Table 4-1 Percentage of pupils surveyed reporting cycling to school on the day of the survey

% cycling to school	Jan-2005	Jan-2006	Sept-2006	Sept-2007	Sept-2008	Sept-2009	Sept-2010	Sept-2011
Primary schools	0.6%	1.7%	3.8%	4.7%	6.1%	7.1%	8.6%	7.7%
Secondary schools	1.5%	2.4%	4.2%	4.0%	6.3%	5.8%	5.9%	6.8%
All schools ^a	0.9%	2.0%	4.0%	4.4%	6.1%	6.7%	7.5%	7.4%

^a These figures are based on data from two Local Authority nursery schools, two Infant/Junior federation schools, 26 primary schools, seven secondary schools, one special educational needs school, one pupil referral unit and two independent schools

4.2 PLASC

The percentage of pupils in Darlington reporting cycling to be their usual mode of travel to school are summarised in Table 4-2. The proportion of pupils usually cycling to primary schools has increased between 2006/07 and 2010/11, although there was a small decrease in the proportion cycling between 2009/10 and 2010/11. Levels of cycling to secondary schools have seen a gradual increase between 2006/07 and 2010/11.

Table 4-2 Percentage of pupils surveyed reporting cycling to be their usual mode of travel to school

	Academic year				
	2006/07	2007/08	2008/09	2009/10	2010/11
Primary	1.0%	1.2%	1.6%	1.8%	1.7%*
Secondary	4.5%	4.6%	5.2%	5.2%	5.1%
All schools ^a	2.7%	2.9%	3.2%	3.3%	3.3%*

^a These figures are based on data from 21 primary schools and five secondary schools

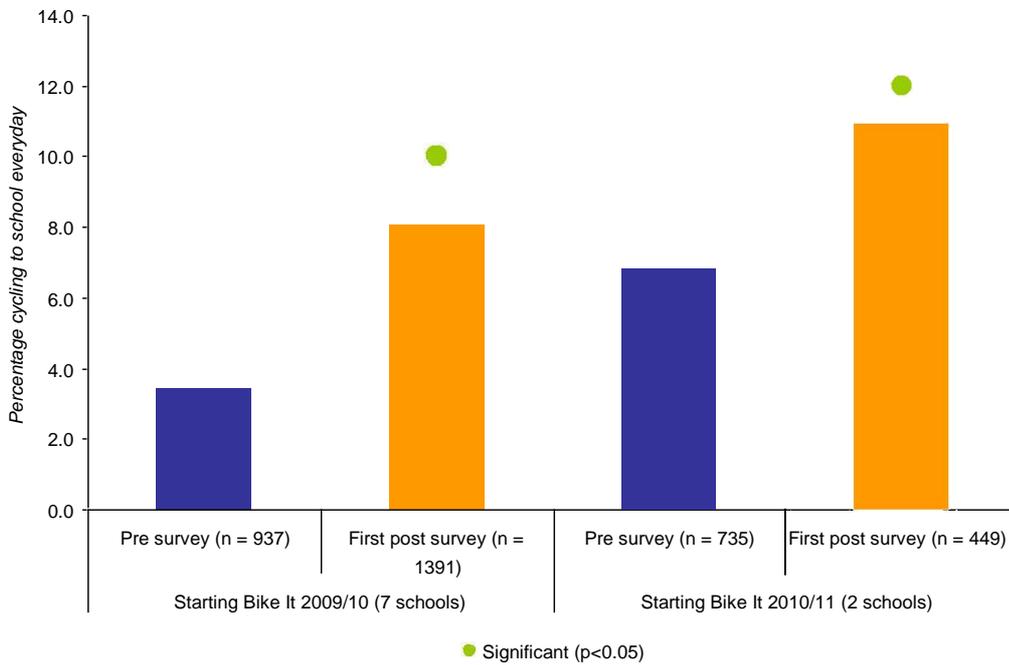
* indicates a significant change in cycling in the 2010/2011 academic year compared to the 2006/07 academic year ($p < 0.05$)

4.3 Bike It

Bike It has been delivered in up to 19 schools in Darlington in each year of the Cycling City and Towns programme. 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 nine 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 both the 2009/10 and 2010/11 academic years.

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 proportion of children surveyed cycling to school everyday increased from 4.9% to 8.8%¹⁰. The proportion cycling to school regularly increased from 11.3% to 27.2%¹¹ and the proportion ‘never’ cycling to school decreased from 75.8% to 54.3%¹². The proportion of children cycling to school on the day of the survey increased from 6.1% to 10.6%¹³.

For four schools in Darlington, 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 4-3. 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’.

¹⁰Significant increase (p<0.05)

¹¹Significant increase (p<0.05)

¹²Significant decrease (p<0.05)

¹³Significant increase (p<0.05)

Table 4-3 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	1.0%	7.1%*	7.5%*
Regularly	7.5%	26.3%*	29.6%*
Never	77.7%	54.4%*	43.7%*

^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

^c 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)

Table 4-4 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.

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

	2007	2008	2009	2010	2011
Non-Bike It schools ^a	3.2%	2.8%	3.4%	3.1%	3.1%
Bike It in 2007 ^{b,e}	2.8%	3.9%	3.6%	3.8%	3.9%
Bike It in 2008 ^{c,e}	3.3%	4.0%	4.5%	4.5%	3.9%
Bike It in 2009 ^{d,e}	0.7%	1.1%	1.2%	2.2%	2.6%

^a Data for 10 primary schools and two secondary schools that were not engaged in Bike It

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

^c Data for five primary schools and one secondary school initially engaged in Bike It in 2008

^d Data for five primary schools and one secondary school initially engaged in Bike It in 2009

^e PLASC 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

5 Analysis of casualty data

Cycle user casualty data were derived for Darlington 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 5-1. Considering all accidents, the difference between the time periods compared is not significant.

Table 5-1 Annual average number of cyclists killed or injured in Darlington before (2003-2005) and during (2006-2010) the Cycling Demonstration Towns/Cycling City and Towns programme

	Annual average number of casualties			Total
	Killed	Seriously injured	Slightly injured	
Pre-programme	0.3	2.7	30.7	33.7
During programme	0.2	4.8	28.8	33.8

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

6 Analysis of physical activity data

6.1 Household level surveys of physical activity

Household level surveys of physical activity were performed in Darlington 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) study¹⁴, 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).

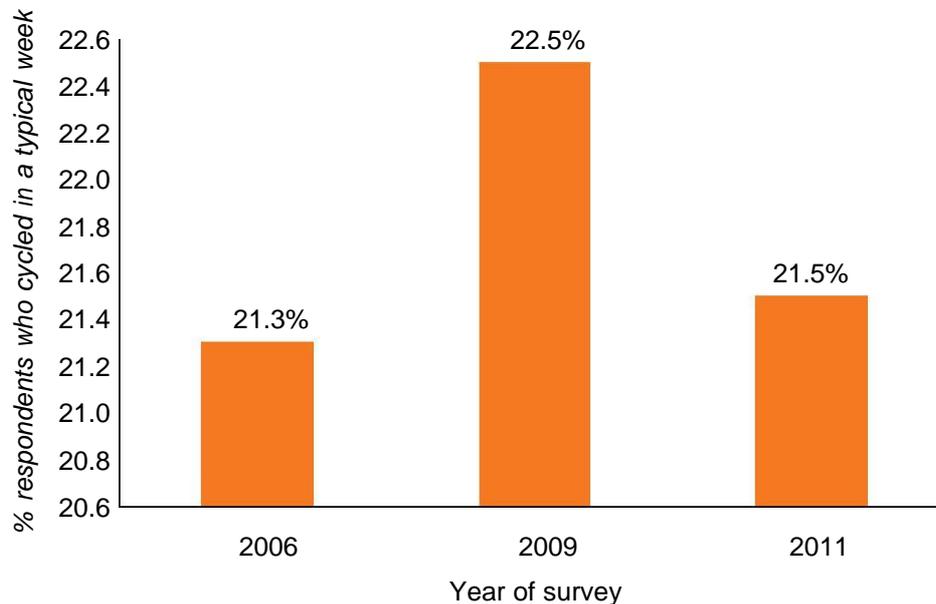
6.1.1 Any cycling in a typical week

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, 21.3% of respondents said they cycled in a typical week. By 2009 this figure was 22.5% and by 2011 it was 21.5%. None of these changes were statistically significant¹⁵.

¹⁴Wareham NJ, Jakes RW, Rennie KL, Schuit J, Mitchell J, Hennings S 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.

¹⁵ $p > 0.05$ in both cases

Chart 6-1 Percentage of respondents who reported cycling in a typical week



6.1.2 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, 20.1% said they were a cyclist (of some type); by 2009 this figure had increased to 21.9% (not significant: $p>0.05$) and by 2011 it was 21.3%. In each survey year, around 1-3% of cyclists said they were “new to cycling”.

6.1.3 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, 30.8% were classed as inactive. By 2009 this reduced to 26.9% ($p<0.05$) and by 2011 it was 26.8%.

6.1.4 Awareness of campaign activity

In research carried out to understand the success of the campaign, 43% of respondents said they had seen or heard some publicity in the town about a programme promoting cycling. In 2011, 67% of respondents recalled the name of the programme (Local Motion) when prompted; this was recalled by 68% in 2009.

Those who were aware of the Cycling Demonstration Towns/Cycling City and Towns programme were asked what they thought about it, using a set of statements. A number of the statements presented positive views about the programme. Table 6-1 shows the proportion of people who agreed with these positive statements.

Table 6-1 Percentage of people who agreed with the following statements

	% agree strongly or tend to agree
The campaign made me think about cycling	48%
The campaign made me want to cycle more	27%
The campaign made me give cycling a try	24%
The campaign helped me see cyclists' point of view rather than drivers'	53%

This shows that around half of the respondents thought the 'campaign' had helped them think about cycling, but only 24-27% considered converting this into action.

A number of the statements presented more negative views about the programme. Table 6-2 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 Darlington.

Table 6-2 Percentage of people who disagreed with the following statements

	% disagree strongly or tend to disagree
The campaign didn't tell me anything new	34%
I didn't take much notice of the campaign	30%
The local authority should not be spending money on cycling	67%

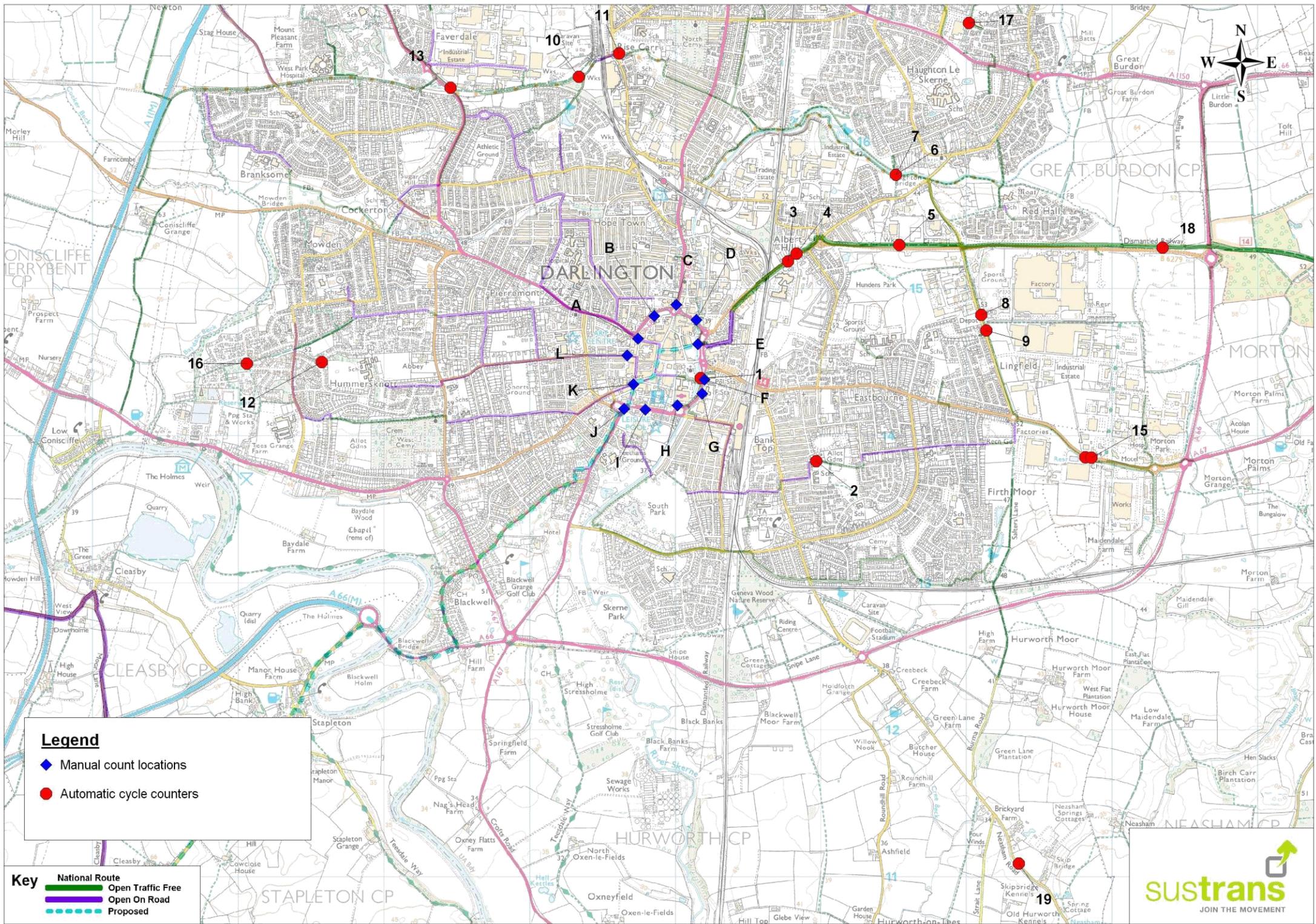
6.2 Active People Survey

There was a significant increase in the proportion of respondents cycling once or more per month between 2005/6 and 2010/11 from 8.6% to 12.7%. A significant decrease was observed in the proportion cycling 12 or more times per month which fell by 1.5%-points (from 2.0% to 0.6%) over the same period¹⁶.

7 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.

¹⁶ In both cases $p < 0.05$

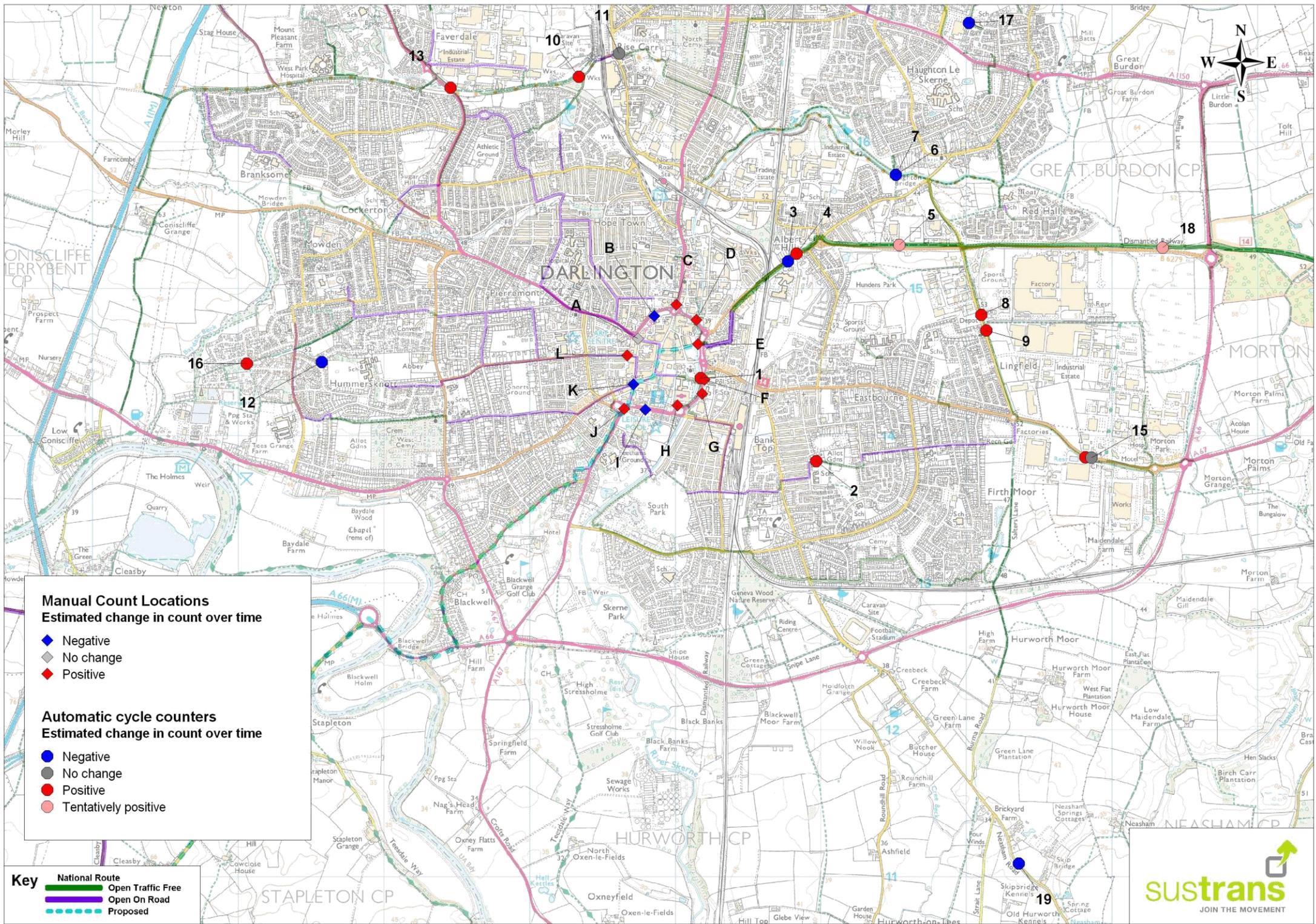


Legend

- ◆ Manual count locations
- Automatic cycle counters

Key

- National Route
- Open Traffic Free
- Open On Road
- Proposed



Manual Count Locations
Estimated change in count over time

- ◆ Negative
- ◇ No change
- ◆ Positive

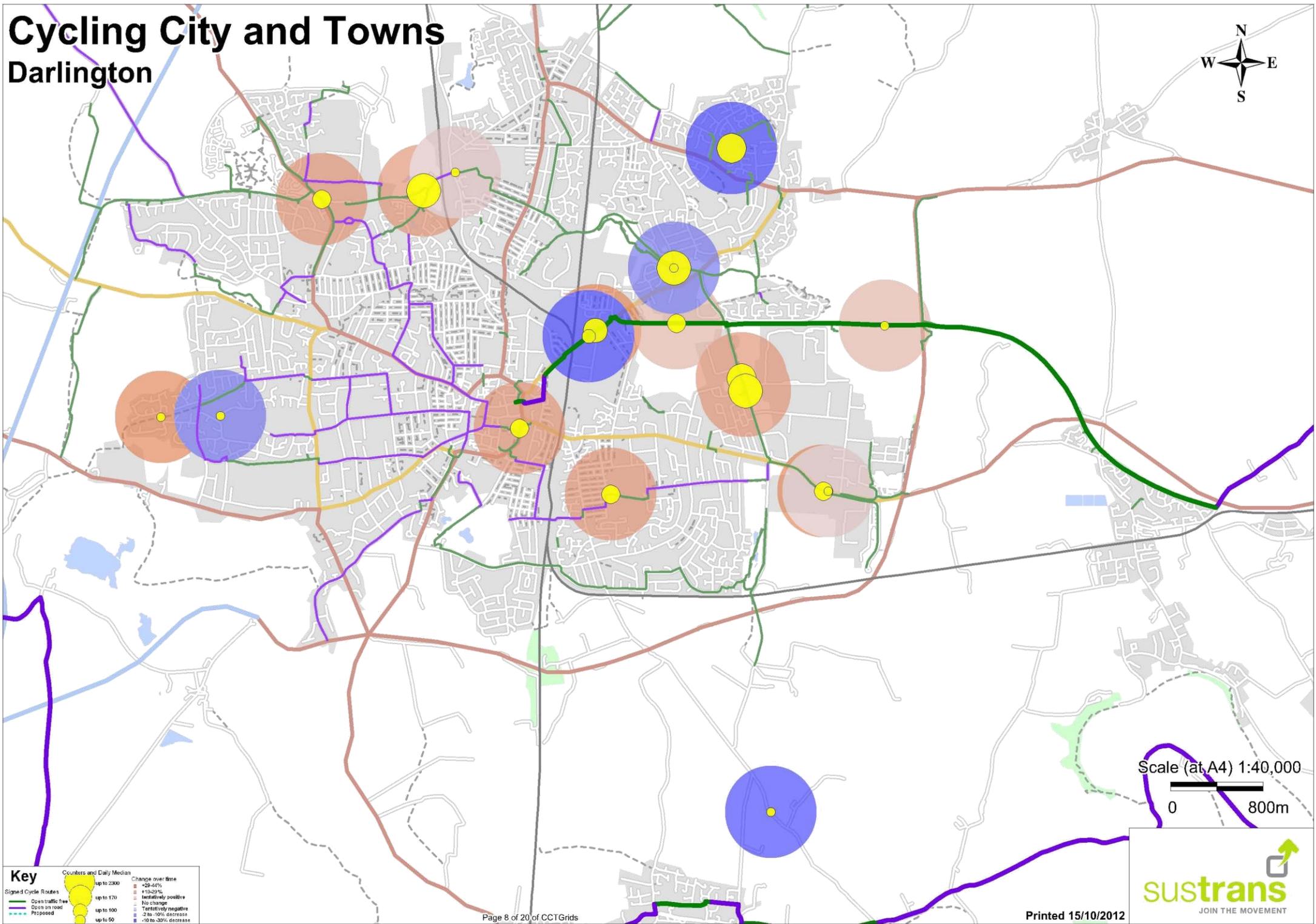
Automatic cycle counters
Estimated change in count over time

- Negative
- No change
- Positive
- Tentatively positive

- Key**
- National Route
 - Open Traffic Free
 - Open On Road
 - Proposed

Cycling City and Towns

Darlington



Key	
Signed Cycle Routes	Change over time
Open traffic free	+29-44%
Cycle on road	+19-29%
Proposed	Indefinitely positive
	No change
	Tentatively negative
	-2 to -10% decrease
	-10 to 30% decrease

Counters and Daily Median	Change over time
up to 2000	+29-44%
up to 170	+19-29%
up to 100	Indefinitely positive
up to 50	No change
	Tentatively negative
	-2 to -10% decrease
	-10 to 30% decrease

Scale (at A4) 1:40,000

0 800m

