

Travel behaviour research in the Sustainable Travel Towns

Briefing Note, June 2009

1. Introduction

This Briefing Note summarises the key findings of travel behaviour research conducted in the three English Sustainable Travel Towns (STTs).

In 2004, the Department for Transport (DfT) selected Darlington, Peterborough and Worcester as STTs to demonstrate the effectiveness of 'smarter choices' initiatives in reducing car use. The three Towns shared £10 million of revenue funding between 2005 and 2008 to support the delivery of extensive programmes aimed at promoting walking, cycling, public transport and car-sharing.

The data reported here are based on a series of travel behaviour surveys conducted by Socialdata and Sustrans in each of the Towns in 2004 and 2008, i.e. before and after delivery of their main STT programmes. More detailed findings have been provided in reports to Darlington Borough Council, Peterborough City Council and Worcestershire County Council, delivered in March 2009.

The main aim of the surveys was to measure changes in personal travel behaviour, attitudes to transport issues, and the potential for change across each of the Towns over the course of their STT programmes. As such, the analysis presented in Sections 2, 3 and 4 of this Briefing Note provides a measure of the overall effects of each STT programme, but it should be noted that the effects of certain external factors and/or background influences (e.g. fuel price fluctuations; bus service changes) cannot be isolated from the overall changes.

The surveys were also designed to measure the specific effects on travel behaviour of the Personalised Travel Planning (PTP) programmes¹ undertaken in each Town. The findings of this evaluation of PTP are summarised in Section 5 of this Briefing Note.

The research method used for these surveys is summarised in Section 6.

The data summarised here form a key input to a broader evaluation of the STT programme commissioned by the DfT. The findings of this work, which includes analysis of road traffic counts, bus patronage statistics and other survey data collected in each of the three Towns, and a comparison with national trends, will be reported in the autumn of 2009.

¹ Otherwise known as Individualised Travel Marketing (ITM).

2. Changes in personal travel behaviour

Key overall changes in personal travel behaviour in the three Towns include:

- Reductions in car-as-driver trips of between seven and nine percent;
- Increases in walking trips of up to 14%;
- Increases in cycling trips of up to 113%²;
- Increases in bus use of up to 35%; and
- Increases in time spent travelling by active modes (walking and cycling) of up to 16% (or an additional 16 hours per person per year).

These changes in personal travel behaviour resulted in reductions in distances travelled per car per day³ ranging between nine and 13%. As a result across the three Towns, a total of around 84 million km of car travel was taken off the roads each year, equating to estimated annual savings of more than 17,000 tonnes of carbon dioxide (CO₂)⁴.

Despite these changes, there was no effect on levels of day-to-day mobility measured in terms of trips per person per day, which remained constant in all three Towns at around three. The type and number of activities per person per day was also unaffected. Likewise there was little or no change in daily distances travelled or time spent travelling (with the exception of Peterborough, which saw a slight increase in average daily time spent travelling from 52 to 56 minutes).

Figures 1 and 2, overleaf, summarise the key results across all three Towns. Figure 1 shows changes between 2004 and 2008 in the proportion of all trips (based on trips per person per year) in each of the three Towns individually and across all three Towns as a whole (labelled 'All STTs'). Figure 2 shows relative changes in the share of all trips made by each mode.

It should be noted that for the purposes of this evaluation:

- A trip is defined as one-way movement generated by an out-of-home activity (including travel between two out-of-home locations).
- The number of trips per person per year was calculated using the standard formula that, on average, a person will spend 341 days of the year at home. This takes into account the days that a person typically travels away, e.g. holiday or business.
- The analysis also focuses on day-to-day personal travel behaviour, so excludes commercial trips and the very small proportion of trips of over 100km.

² The 113% increase in cycling trips was observed in Darlington, which received funding through the 'Cycling England' Cycling Demonstration Towns programme in addition to its STT grant.

³ For day-to-day car trips of less than 100km

⁴ Based on a fleet average emissions factor of 207.5g CO₂ per vehicle km, from Defra's (2007) *Guidelines to GHG Conversion Factors for Company Reporting*.

3. Attitudes towards and perceptions of local transport

In addition to travel behaviour, the research collected information on attitudes towards and perceptions of local transport. Key findings from this part of the evaluation include:

- The proportions of people in each Town expecting growth in years to come in levels of walking, cycling and public transport use had increased substantially since 2004, and these trends were seen as overwhelmingly positive by those who expected them.
- Although a clear majority of people in each Town believed car traffic would also increase in future, the proportions expecting no increase had grown considerably since 2004 (up to 36% in Darlington and Worcester and 21% in Peterborough).
- There were improvements in all three Towns in levels of satisfaction with public transport, and in Peterborough and Worcester substantial increases in the proportion of people rating public transport services as better than four years previously.

These findings suggest some significant shifts in underlying attitudes to local transport issues, and improved perceptions of the available alternatives to car travel, which together can be expected to underpin sustained changes in travel behaviour.

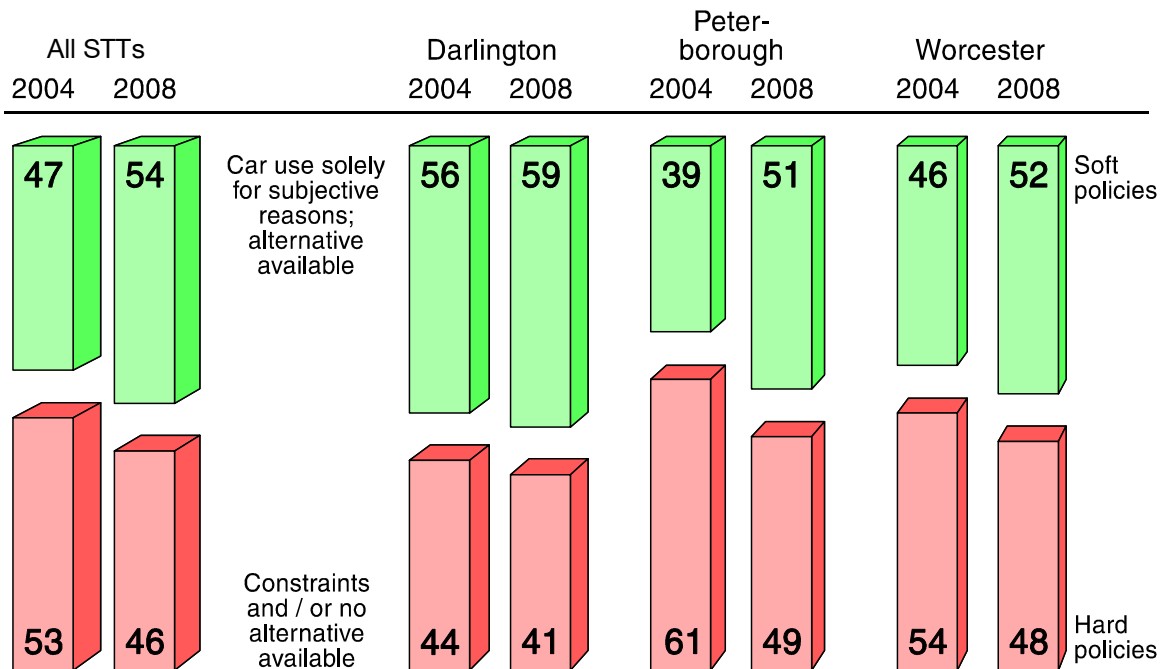
4. Potential for further travel behaviour change

By examining in more detail the trips recorded in respondents' travel diaries, the research explored the potential for further changes in travel behaviour in each Town. This work illustrates that, despite the changes in travel behaviour achieved between 2004 and 2008, the potential for further shifts from car to sustainable travel modes is even greater than it was at the start of the STT programme. In particular, it is notable that:

- In 2008, more than half of all car trips within each of the three Towns could feasibly have been made on foot, by bike and/or by public transport (59% in Darlington, 51% in Peterborough and 52% in Worcester). In each town this was a greater proportion than in 2004 (see Figure 3, overleaf). These findings suggest a virtuous circle with regard to soft measures: a sustained programme of such measures in each of the STTs actually created further potential for change, meaning that continued delivery of soft measures could continue to generate modal shift.
- Cycling provided the most common alternative to car use in all three Towns. It also saw the greatest increases (compared to walking and public transport) in potential to replace car trips across all three Towns. In Darlington in 2008 41% of local car trips could feasibly have been replaced by cycling (up from 34% in 2004), while in Peterborough the figure was 42% (26% in 2004) and in Worcester 39% (34% in 2004). These figures reflect the flexibility and range of cycling as an alternative to local car travel.
- There were also substantial improvements in all three Towns in the level of information about available public transport services. Furthermore, while perceptions of relative travel time remained a key barrier to greater use of public

transport, the gap between people’s estimates of travel time and actual journey times (by both car and public transport) had been reduced.

Figure 3. Potential for transfer of local car-as-driver trips to other modes (2004 and 2008)⁵



5. Evaluation of PTP programmes

Personalised travel planning (PTP) was a key component of the STT programmes in each of the Towns. PTP works directly with households to provide tailored information and support enabling people to walk, cycle and use public transport more often. The PTP schemes in Peterborough and Worcester were delivered by Sustrans and Socialdata using the TravelSmart methodology⁶ while the Darlington programme was managed by a firm of private consultants using an alternative approach.

More than 30,000 households in Peterborough (around 50% of the city’s population) and more than 23,500 households in Worcester (around 60% of the city’s population) were approached to participate in their respective PTP programmes, with contact rates exceeding 80% in both Towns. In Darlington the whole population (40,900 households) was targeted for PTP, with a contact rate of 66%.

Figure 4, overleaf, shows the changes in mode choice associated with the PTP programme in each Town. These changes were measured across the PTP target

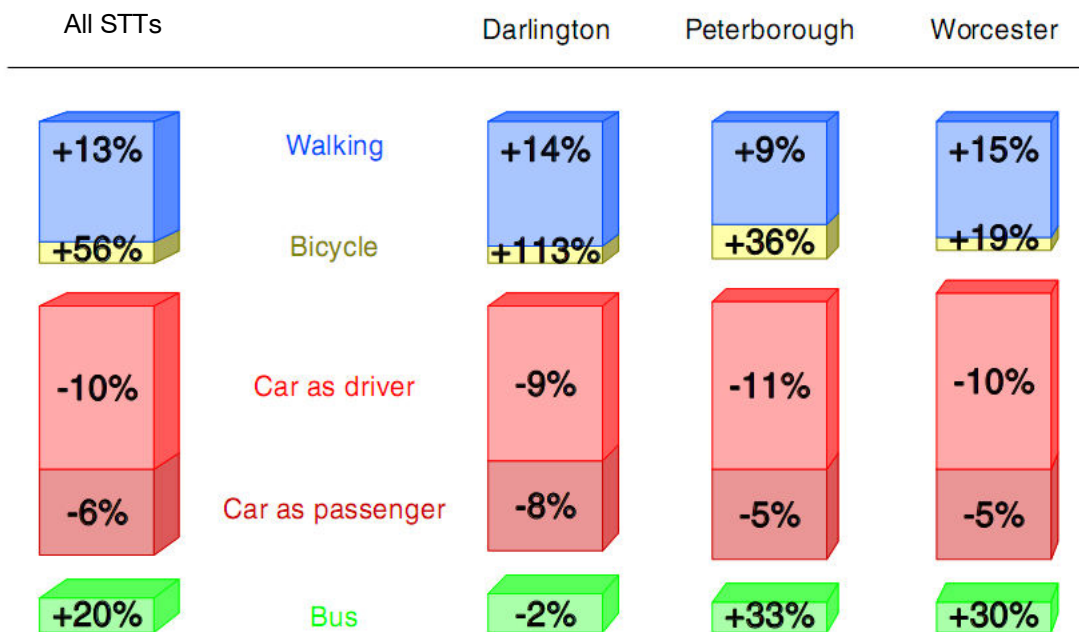
⁵ Constraints include factors such as carrying heavy luggage or using a car for business reasons; lack of alternatives includes situations in which a public transport option may in principle be available, but takes so long that it is not a practical choice.

⁶ Although they used the TravelSmart approach, the PTP programmes were delivered under each Town’s STT branding: *My Travelchoice* in Peterborough and *Choose how you move* in Worcester.

population (including those who could not be contacted and those who were contacted but chose not to participate). The data shown have not been adjusted to take account of any changes in travel behaviour due to background factors and/or other local transport measures.

By comparing with Figure 1, we see that in Peterborough and Worcester the relative reductions in car-as-driver trips were greater among the PTP target population than city-wide. For Darlington the changes are exactly the same as in Figure 1, as the PTP target population and town-wide population were identical. A more detailed analysis of the changes among participating and non-participating households in each of the STTs' PTP programmes is available on request.

Figure 4. Changes in mode choice among PTP target populations (2004 to 2008)



6. Research method

Two main research tools were used in evaluation of each Town's STT programme:

- Travel behaviour surveys following Socialdata's New KONTIV® design, using a self-administered mail-back diary technique. It consists of a questionnaire sent to each household in the survey sample, together with a set of individual travel diaries for all household members for a nominated day of the week. The survey samples in each Town included households completing travel diaries for all seven days of the week.
- In-depth face-to-face interviews with a sub-sample of households responding to the travel behaviour survey. The interviews explored reasons for people's car use on specific trips recorded in their travel diaries, and the possibilities for using walking, cycling or public transport. Participants also discussed their perceptions of travel

and transport issues; attitudes towards different transport policy options; and satisfaction with public transport in their town or city.

The 2004 and 2008 studies were conducted using exactly the same method, at the same time of year, and covered all residential wards of Darlington, Peterborough and Worcester. Samples for each written survey were randomly selected and stratified to ensure a sufficient sample size to provide reliable data at ward level. The research did not use a ‘panel’ design (where the same participants are deliberately tracked over time). If any individual did participate in both surveys in their town or city, this was purely as a function of random sampling. Samples were drawn from the UK’s most comprehensive commercially available database of postal addresses and telephone numbers. Information on sample sizes and response rates is provided in Table 2.

Table 2. Sample sizes and response rates for 2004 and 2008 surveys

	Darlington		Peterborough		Worcester	
	Net sample ⁱ	Response rate	Net sample ⁱ	Response rate	Net sample ⁱ	Response rate
2004 written survey	4,269	59%	4,461	60%	4,125	59%
2008 written survey	4,178	60%	4,396	62%	4,072	63%
2004 interviews	406	63%	403	64%	400	73%
2008 interviews	402	71%	403	74%	409	72%

Note: ⁱ Net sample sizes refer to individuals who returned completed travel diaries, not households.

For further information on this research, please contact:

Rob Wall
TravelSmart Project Manager
t: 0117 915 0241
e: rob.wall@sustrans.org.uk