4. School travel plans

4.1 Introduction

The 'school run' accounts for a small proportion of all car traffic on the road, but, in urban areas, it is a significant contributor to peak hour congestion. In Britain, the proportion of children, especially younger children, being driven to school has risen significantly over the last 25 years. Research by Bradshaw and Atkins (1996) found that car escort trips were increasing even when car ownership was held constant: for example, amongst two-car households the proportion of primary-age children escorted to school by car rose from 38% to 53% in the two decades after 1975. According to the National Travel Survey, the proportion of children travelling to school by car increased from 16% in 1985/86 to 28% in 1999/2001 (although it should be noted that this is a slight decline, from 29% in 1995/97, offering some hope that the situation may be stabilising or even reversing).

There has been considerable interest in the 'school run' for a number of reasons. Originally, interest in school travel was generated by concerns about children's safety, and loss of independent mobility (as highlighted by Hillman et al, 1990). Since that time, there has also been increasing concern about the congestion impacts, particularly in the immediate vicinity of schools. Measures to encourage non-car travel to school are also perceived to be important because sustainable patterns of travel behaviour may be carried into adult lives (and conversely, children who never travel by bike or bus are less likely to switch to these modes in adult life). There may also be health benefits from encouraging walking and cycling, an issue which is gaining particular interest given concerns about the growth in childhood obesity.

Initially work on school travel primarily focused on physical street improvements, such as traffic calming, 20mph zones, cycle lanes and safe crossings. Over time, the approach has developed to include a greater concentration on consultation with the school and local community, education and information measures, road safety training, changes within the school and initiatives such as 'walking buses' and, more recently, 'cycle trains'. These involve volunteer parents escorting groups of children by foot or by bike on a fixed route. Measures to encourage bus use are also often promoted: for example personalised timetable information, discount tickets, new bus services and dedicated school buses. The current focus includes each school drawing up a 'school travel plan' in partnership with their local authority, as part of developing their own, individual long-term strategy to address school travel issues.

The issue of school travel has also increased in political importance. Following on from the 1998 Integrated Transport White Paper, a school travel advisory group was set up (STAG). In 2001, funding was made available for the three year appointment of 57 travel co-ordinators to work in local authorities on school travel, and a further 17 co-ordinators to focus on both school and workplace travel. An advice scheme, whereby schools could request five days of free advice on their situation, was also established and by February 2003, more than 200 schools had received advice under the scheme. In September 2003, the government announced a major new initiative to address travel to school, which was particularly significant because the initiative is a joint one between the departments of Transport and Education. In support of the

initiative, £7.5 million per year has been allocated for at least two years to fund more local authority based school travel advisers, and regional travel advisers have been appointed, based in each government office region. Local authority schools with an authorised travel plan have also become eligible for capital funding (approximately £5000 per primary school and £10,000 per secondary school) to fund their travel work. New legislation is also being discussed, which will enable local education authorities to pilot new arrangements for statutory transport and school hours.

At the same time as the increase in political interest in the topic, there has also been additional research commissioned. Specifically, a major study entitled 'Making School Travel Plans Work' is in progress. This has involved interviews with 30 schools (chosen to represent good practice), and their 23 associated local authorities. The study aims to examine what has been achieved, and the factors which have been responsible for success or failure. It will lead to good practice guidance. As discussed in section 4.5, there has been some overlap with this project, and both projects have been able to draw from each other. In particular, section 4.9 has been able to benefit from some of the findings of 'Making School Travel Plans Work'.

4.2 Literature evidence about the traffic impacts of school travel work

In terms of research evidence about the effects of school travel work, there have been a number of studies, which have included an assessment of where the greatest impact can be made, what individual schools are achieving, and what particular types of school travel initiatives are achieving. Details are given below and summarised in table 1.

Research commissioned by the AA Foundation For Road Safety Research undertaken by Bradshaw and Jones (2000) concluded that improvements to public transport offer the greatest potential to reduce car escort mileage (as opposed to car *trips*), because most car mileage for this journey purpose is on trips too long to be walked or cycled.

Sloman (2003) reported before and after monitoring data on 17 school travel plans, gathered from a variety of sources. There was considerable variation in outcomes: at 13 of the schools, the number of cars arriving per 100 pupils declined by between 4 and 23, equivalent to reductions in car use of between 8% and 52%. However, the three schools with the lowest 'before' car mode share (all under 10%) failed to achieve any further reduction (and in one case, car mode share slightly increased). There was also one further school where there was no reduction in car use.

In research commissioned by DTLR (2001), four local authorities felt they had sufficient experience to estimate the reduction in car travel at targeted schools as a result of school travel plans. Hertfordshire gave an estimate of 30%, Derby City Council estimated 20%, Manchester City Council estimated 11% and North Tyneside Council estimated 10%.

European projects have also reported car use reductions. In the Swedish city of Lund, for example, where a walk and cycle to school project combined hard engineering measures with information for parents, road safety training and health promotion, the

percentage of parents driving their children to school fell from 17% to 13%, a reduction of 23.5% (Hyllenius, 2003).

A report from the MOST project (Mobility Management Strategies for the Next Decades) on demonstration projects in Limburg, Belgium and Surrey in the UK, found promotion of cycling and walking for school children worked well, providing the safety concerns of parents were taken into account. Car free action days or weeks motivated high proportions of pupils and parents to change their travel behaviour and were popular among parents. Longer term experience showed a typical percentage reduction in car use of between 6 and 16%, but with reductions as high as 42% in some cases, (Wilhelm 2003).

In contrast to these studies, a recent evaluation of the effects of site specific advice provided by two part-time school travel co-ordinators to schools in Camden and Islington, found no evidence of changes in children's travel patterns, or reductions in parental fears about children's safety, (Rowland et al 2003). This randomised controlled trial compared the results of 16 hours of expert advice in 11 schools that had received the intervention, with results in 10 schools that had not. One year on, nine of the 'intervention schools had developed travel plans, but without obvious beneficial impacts. However, many of the actions listed in these school travel plans had yet to be implemented, and the researchers themselves commented that the changes needed to make a difference "were unlikely to be implemented within the project time frame". Consequently, the value of these results is unclear.

Table 4.1: Literature evidence about the effects of school travel work on car use

Source	Finding
Bradshaw & Jones (2000)	Greatest reductions in mileage likely to come from public transport improvements
Sloman (2003)	Monitoring data from 17 school travel plans showed a car use increase at one, no change at three and reductions of between 8% and 52% at the others.
DTLR (2001)	Four local authority estimates of the typical change in car use from travel plans were between 10% and 30%.
Hyllenius (2003)	School travel work in Lund has reduced car use by 24%
Wilhelm (2003)	Projects in Limburg, Belgium and Surrey,UK have typically reduced car use by 6-16%, but with reductions as high as 42%
Rowland et al (2003)	No change in travel behaviour or parental perceptions of safety following one years work at 11 schools in Camden.

In addition to evaluations of general school travel work, there have also been evaluations of particular types of initiatives:

- **Yellow buses**: a recent evaluation of the introduction of yellow buses into the UK shows that they generally become well used, and can be effective at reducing car use, particularly at primary schools (SDG, 2004). The original pilot projects evaluated by SDG were in Wrexham (North Wales), Runneymede (Surrey) and Hebden Bridge (North Yorkshire). Surveys after the introduction of the yellow buses took place in September 2002 and May 2003. Car use at both the evaluated primary schools reduced (from 45% to 34% at Wrexham Primary and 40% to 36% at Hebden Bridge Primary – comparative reductions of 24% and 10%

respectively). Results at the two evaluated secondary schools were more mixed (at Wrexham Secondary car use increased, whilst at Runnymede Secondary, there was an initial dip in car use, from 38% to 33% by September 02, although car use had returned to previous levels by May 03). The SDG report also reported on other surveys of the impacts of introducing yellow buses. At Standish Community High school in Wigan, 135 students now have yellow bus passes, 31% of which previously travelled to school by car. In Ilkley, where yellow buses have been introduced at primary schools, 64% of users previously travelled to school by car. Some other areas reported that yellow bus use had not achieved modal shift, although this was for a range of reasons (yellow buses were introduced for children already entitled to statutory transport; no promotion of services took place due to limited capacity; services introduced to control costs only).

- **Walking buses in New Zealand**: An evaluation carried out in four schools in Christchurch, New Zealand covered 13 walking buses. Of the 112 children involved, 40% were not previously walking to school, (O'Fallon, 2001).

- **Walking buses in Hertfordshire**: A postal survey of schools with walking buses has been carried out in Hertfordshire (Mackett et al, 2003). According to walking bus coordinators, 62% of the children now travelling this way used to travel to school by car (though not necessarily every day). The survey found the 'buses' frequently folded because of a lack of volunteers or coordinators, but that the majority achieved their objectives, which mostly involved shifting children from car to walking. The work also suggested that there may be a natural age limit for children participating (with the peak in interest being amongst children aged 6-7).

- **Walk to School week in Hertfordshire**: Hertfordshire have also been involved in the TAPESTRY EU project (Tapestry 2003), which included an assessment of their Walk to School week campaign, as carried out in May 2002. This work is discussed further in the travel awareness chapter. In brief, it involved an evaluation at 11 schools which received the campaign, comparing them with 2 control schools which did not. As well as achieving changes in attitudes, there was a small (1.3%) increase in the proportion of children walking to school at least once a week in the campaign schools compared with a small (1.3%) decline in the proportion at control schools. At both types of schools, 10%-15% of respondents said that their child walked to school more compared to the same time last year (and the researchers argued that national press and countywide publicity about walking to school had probably affected parents even when their school has not been directly engaged in Walk to School week).

4.3 Literature evidence about other effects from school travel work

In addition to evidence about the impact of school travel work on modal shift, there has also been considerable interest in other potential impacts from such work, although there has been less research to evaluate these.

In particular, there has been interest in the safety benefits that can be achieved from the engineering work that often takes place as part of school travel plans. The UK has

relatively high pedestrian casualties rates compared to other European countries such as the Netherlands, Denmark and Sweden. The Transport Select Committee report on Road Traffic Speed concluded that one contributory factor was a relative lack of speed reduction measures in the UK (DTLR 2002). It also highlighted that addressing this issue could be effective at achieving similar results in England, as shown by the experience of cities such as Gloucester, Hull and York. In Hull, for example, well engineered 20mph zones have achieved a 74% reduction in child pedestrian accidents. In Gloucester, a Department for Transport funded five year Safer City project involving extensive speed management and physical speed reduction measures, resulted in a 24% decline in child pedestrian casualties between 1996 and 2000. Both these cities were considered as potential case studies for this project, as discussed in section 4.5.

The safety benefits of encouraging more children to cycle have also been highlighted by a number of commentators, as, in general, higher levels of cycling seem to result in lower accident rates. In the Netherlands the level of cycle traffic increased by 30% between 1980 and 1990, yet annual cyclists' deaths fell (Dutch Ministry for Transport, 1999). In York, too, where there has been consistent investment in traffic calming and cycling infrastructure, a ten year period has seen casualties reduced by 30%, while peak-hour cycling has increased by 10%, (DfT 2000). Wardlaw (2002) compared cycling statistics from the UK with France, Denmark, Germany and the Netherlands, and concluded that "cycling gets safer as it becomes more popular", and that "there is no known example in recent decades when an increase in cycling has led to an increase in cycle deaths". An international survey of travel by 10-14-year-olds, using comparable data from 8 countries has also shown that higher levels of cycling amongst this age group are linked with fewer accidents per kilometre cycled (Christie et al 2004).

There is also a growing body of evidence about the health benefits of encouraging children not to travel by car. Evidence from Sustrans (2003) suggests that there may be a correlation between levels of cycling in different European countries and weight problems in children. The International Obesity TaskForce also highlights that changes in children travel habits may be contributing to the growth in obesity, and that measures to encourage more walking and cycling to school should be part of the solution (IOTF, 2002).

Research undertaken by UCL in Hertfordshire has also examined the role of the school journey in children's physical activity (Mackett et al, 2003b). The work involved 149 children from Hertfordshire schools from years 6 (age 10/11) and 8 (age 12/13). These children were fitted with activity monitors, and monitored over a 4-day period. Key results of this work are as follows:

- Children are typically over 20% less active on weekend days compared to weekdays which may partly reflect the lack of travelling to school
- A typical one-way trip to school by car (18 activity calories) gives less than half the amount of physical activity of travelling by bus (40 activity calories) or on foot (48 activity calories)
- On average, children gain 9% of their physical activity travelling to and from school

- On average, children use more calories travelling to or from school than they do from two hours of PE. This is particularly true for older children who do not travel to school by car.

Finally, there have been various studies showing that reducing car use for the school run could be popular amongst parents and children. Specifically, a study carried out in Spring 2000 demonstrated that school travel work can help to satisfy children's travel preferences. The survey was undertaken by Carrick James Market Research for the 'Are you doing your bit' campaign (DETR 2000). It involved interviews with 769 children aged 7 to 11 at 40 locations across England. The results showed that, of children travelling to school by car, 17% would prefer to walk all the way and 21% would prefer to cycle. In addition, a higher proportion of children travelling on foot, 57%, liked their current method of transport compared to 43% of those going by car. Meanwhile, a survey for the Department for Transport (2002) found that 65% of parents taking their children to school by car would prefer not to drive, but feel that they have no alternative.

Further benefits from school travel work, in addition to health and safety gains, have emerged through the case study examination, and these are discussed in more detail in section 4.10.

4.4 National evidence about the scale of school travel work

It is notable that, although there has been interest in school travel in the UK since the mid-1980s, widespread practical work with schools is relatively recent. According to a 2001 DTLR report, at that time only 4-5% of schools had implemented a travel plan, with a comparable proportion having one 'firmly planned'. Meanwhile, comparisons are often made with European practice. For example, the city of Odense in Denmark has implemented more than 200 projects to improve safety for school pupils over the last 20 years (for example, traffic calming, traffic islands and cycle lanes), and consequently has high levels of cycling, and significantly reduced accident rates (Andersen, undated).

Whilst the UK has been relatively slow to introduce widespread practical work with schools, there has been relatively rapid progress in the last few years. Based on analysis of Local Transport Plan annual progress reports, the Department for Transport has provided data for this project about the current and future number of school travel plans to be implemented. This has been combined with DfES data about total numbers of schools to give the following two tables showing the scale of school travel plan implementation in 2003 and 2006.

Table 4.2: Number of school travel plans in England in 2003

Government Office region	*Total number of schools**	*Total number of school travel plans implemented by 2003~*	*Implied % schools with a school travel plan by 2003*
North East	1209	379	31
North West	3370	385	11
Yorkshire & Humber	2389	299	13
East Midlands	2198	312	14
West Midlands	2496	347	14
East of England	2745	235	9
South East	3763	759	20
South West	2562	393	15
Total	*20732*	*3109*	*15*

* Data from National Statistics (2003) *Statistics of Eduction: Schools in England*. London: TSO. Data includes primary, middle, secondary and independent schools. It excludes nursery schools, special schools, pupil referral units, city technology colleges and academies.
~ Data supplied by DfT based on local transport plan annual progress reports.

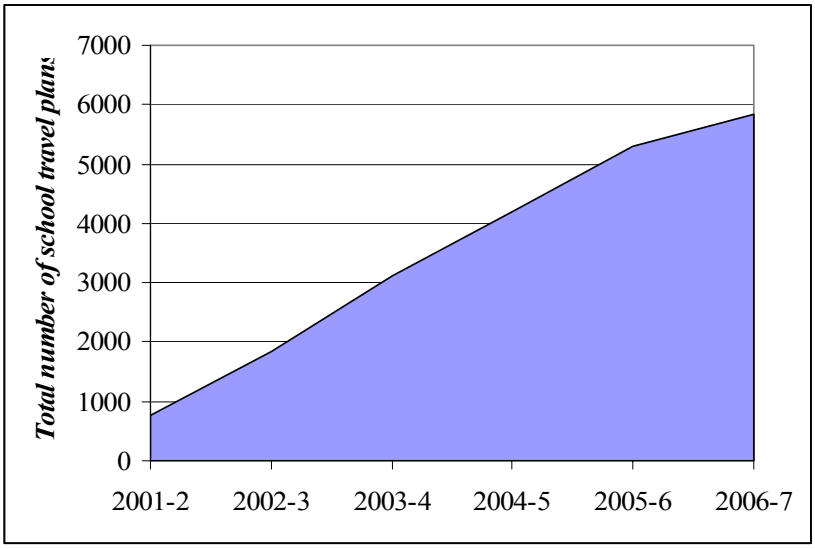
Table 4.3: Number of school travel plans in England proposed by 2006

Government Office region	*Total number of schools**	*Total number of school travel plans to be implemented by 2006~*	*Implied % schools with a school travel plan by 2006*
North East	1209	676	56
North West	3370	618	18
Yorkshire & Humber	2389	522	22
East Midlands	2198	611	28
West Midlands	2496	759	30
East of England	2745	475	17
South East	3763	1367	36
South West	2562	819	32
Total	*20732*	*5847*	*28*

* Data from National Statistics (2003) *Statistics of Eduction: Schools in England*. London: TSO. Data includes primary, middle, secondary and independent schools. It excludes nursery schools, special schools, pupil referral units, city technology colleges and academies.
~ Data supplied by DfT based on local transport plan annual progress reports.

Department for Transport figures also give some indication of numbers of school travel plans being implemented over time. These are as follows:

Figure 4.1: Number of school travel plans being implemented over time in England.



Taken together, these figures imply that, nationally, by 2003, about 15% of schools had travel plans, although the proportion ranged from 9% in the East of England, to 31% in the North East. By 2006, about 28% are expected to have travel plans, with the proportion ranging from 17% in the East of England, to 56% in the North East. It also appears that, nearing 2005, local authorities anticipate that there may be a slowing down of the number of schools involved. It is hard to assess why – possibly it may reflect that they expect all the 'easy targets' will have been reached, or possibly it may reflect that there is an anticipated shift from working with primaries to working with secondaries (who are likely to be more labour intensive per school given their greater size). However, it would be unwise to read too much into what are currently speculative forecasts – especially as many local authorities have only just started to make work in this area a mainstream activity in the last few years.

4.5 Selection of school travel case studies

The preceding sections provide evidence from the literature and national statistics about school travel work. In addition, three local authority case studies of school travel work were examined in detail.

In selecting case studies for this project, there were a number of authorities which were known to have undertaken impressive work on school travel or related work on improving safety in residential areas. Consequently, the following authorities were contacted:

- Buckinghamshire County Council
- Cambridge County Council
- Cornwall County Council
- Gloucestershire County Council
- Hertfordshire County Council
- Hull City Council
- Merseyside
- Oxfordshire County Council

- Sandwell Metropolitan Borough Council
- Surrey County Council, and
- York City Council

In the end, three of these, Buckinghamshire, Merseyside and York were chosen. The main reason was that, at the time, these authorities appeared to have the best available data about the results of their work. The majority of the others did not, at the time, have specific results available.

It should be noted that Gloucester and Hull councils were contacted because of their extensive work on traffic calming, speed management and traffic safety, rather than because of their work on school travel. It was interesting that neither authority has particularly linked these initiatives with school travel work. Indeed, in Hull, there has been little development of school travel plans. In Gloucester, work on school travel is still at an early stage and there were no available data about the effects of their school travel work. However, in a survey of 972 residents in Hull living in areas where 20mph zones had been introduced, 52% of respondents said they thought that more children played in the street since traffic calming was introduced, and 23% said that they walked or cycled more often, (Kirby, 2002). The Gloucester Safer City report (2001) highlighted that the number of parents who said that they let their child go to school on their own had risen from 32% in 1996 to 49% in 2001.

Since the soft factors project interviews took place, the interviews for the parallel 'Making School Travel Plans Work' have taken place with 23 local authorities (including Buckinghamshire, Merseyside and York). In some cases, these have been able to draw on more recently available data from authorities that were initially contacted for the soft factors project. In other cases, authorities were not initially approached for the soft factors project but have emerged as useful sources of information and insight. The data from all 23 authorities is analysed in relation to the effects of their work on car use in section 4.9. Meanwhile, the rest of the chapter concentrates on the evidence provided by Buckinghamshire, Merseyside and York.

4.6 Details of chosen school travel case studies

The 3 case studies which provide the main evidence for this chapter have interesting and contrasting histories and approaches to the school travel issue. These can be summarised as follows:

York: York began its school travel work with a strong focus on safety, including road safety training, infrastructure and and engineering work designed to reduce traffic danger. This approach has continued. In addition, the city has a strong history of cycling, and this is also reflected in its work which is partially guided by its stretched public service agreement target to increase the number of children who normally cycled to school in years groups 6-9, from 5.8% in 1999 to 10.3% by December 2005.

Buckinghamshire: Buckinghamshire initially began its school travel work by focusing on infrastructure, but now believes the most effective way of achieving modal shift is to focus on non infrastructure measures and small scale work. Consequently, it has prioritised this type of work with schools. It has developed a grading system (levels 1, 2 and 3) for travel plans, where schools achieving a level 3

travel plan are eligible to apply to an awards scheme to get measures at their school funded.

Merseyside: Merseyside has been working on school travel for some time, however there was a major increase in staffing in 2001, when the number of staff involved increased from less than two to a team of seven people, helped by funding from the Department of Transport, the PTE and the Health Action Zone. This team now works across the five local authorities based in the area; the work is gaining significant impetus; and has many dimensions of interest including strong health links and work in extremely deprived areas.

4.7 Staffing and budgets for school travel work

Data about local authority staffing and budgets are given in table 4.4.

Table 4.4: Staffing and budgets for school travel work (summer 2003)

		Bucks	Merseyside	York
Length of time scheme has been running		4 years	5 years (2 years intensively)	5 years (with early work dating back 8 years)
Number of primary and secondary schools worked with		142	124	43
Number of primary and secondary school pupils covered by travel plans		47,000	43,000	17,609
Staff time in local authority / PTE initially		1 fte	0.5 fte	4.6 fte
Staff time in local authority / PTE once scheme established		6.5 fte[1]	5 fte[2]	7.0 fte[3]
Expenditure in first 'intensive' year	Capital	£0[4]	£644,500	£520,000
	Revenue	£25,000[5]	£156,000[6]	£7,000
Expenditure in most recent year	Capital	£89,000	£644,500	£628,000
	Revenue	£184,500[5]	£156,000[6]	£62,629

[1] School travel plan co-ordinators and school travel initiative officers
[2] This includes 4 full-time equivalent posts in Merseytravel and one post in Knowsley Council.
[3] This includes staff time promoting school travel plans, providing engineering measures (safe routes to school and school safety zones), installing cycle parking, and cycle and pedestrian training
[4] Although there was capital spending in Buckinghamshire originally, this work is no longer considered to be part of the school travel approach, and has therefore not been included above.
[5] Staff costs have been calculated by assuming an average staff salary of £25,000
[6] This has been calculated by assuming that 4/7ths of the total revenue budget for travel planning in Merseyside are for school work, and adding an assumed salary of £25,000 for the school travel advisor in Knowsley.

At the time of our interviews, work on school travel plans had been going on for between four and five years in all the case study areas, although York has a longer track record of work on safe routes to school engineering measures (which dates back to 1995), and Merseyside has only begun to work intensively with schools in the last few years.

Staffing levels in the three case study areas were similar, at between 4 and 7 full-time equivalent posts. However, the way in which these staff were deployed differed

between the case studies. In Buckinghamshire and Merseyside, all staff posts were focussed on developing travel plans – that is, primarily on non-infrastructure measures. In contrast, York had only one staff post developing travel plans, with the rest involved in engineering measures, road safety, installation of cycle parking, or pedestrian and cycle training. (It should be noted that engineering time spent in local authorities across Merseyside has not been included in these figures).

The number of schools engaged and budgets were also very different between the case study areas. In particular, Buckinghamshire had engaged with a high number of schools, it had a relatively low budget, most of which was revenue, and these characteristics undoubtedly related to its focus on non engineering measures. In contrast, York had engaged with far fewer schools, its budget was far higher and the majority of this funding was capital money. Again, this clearly related to its focus on engineering measures. Merseyside appeared to represent a midway scenario, engaging with a high number of schools, with reasonably substantial revenue and capital budgets. (It should be noted that statements in this paragraph relate to absolute levels of engagement, as opposed proportional levels of engagement, which are explored in the next section). In general, it is accepted that engineering measures are relatively expensive (per school) compared with non engineering measures, although there are strong arguments that both are essential.

The three school travel plan case study areas were also case studies for their workplace travel plan activity. This is reported in chapter 3, but it is noteworthy that all three authorities have given a higher priority, in terms of budget and staffing, to school travel work than they have given to workplace travel. In York, total spending on workplace travel plans, including staff costs, was £52,000 in the most recent year, while total spending on school travel programmes was £691,000. In Buckinghamshire, total spending on workplace travel plans was £108,000, compared to an estimated £273,500 on school travel. In Merseyside, total spending on workplace travel plans was £98,000, compared to an estimated £156,000 on school travel plans plus a further £644,500 for safe routes work at local authority level. Whatever the reasons, for the disparity, school travel plan co-ordinators in those authorities were working actively with a much higher proportion of school pupils than workplace travel plan co-ordinators were with employees. In other words, the increased resources allocated to school travel plans had translated into greater activity and more impact.

We were also interested in estimating the costs of school travel work in terms of each affected pupil. Table 4.5 shows the revenue costs per pupil targeted.

Table 4.5: Revenue cost of school travel plans per affected pupil

	Revenue cost per pupil (£)
Buckinghamshire	£3.93
Merseyside	£3.63
York	£3.56

Calculation based on revenue expenditure and pupils affected by travel work, in current year.

Revenue costs were similar in all three case study areas, at about £3.50 - £4 per pupil. This is comparable to the upper end of the range of costs per employee targeted for workplace travel plans. The fact that the figures are at the higher end of the range may

reflect that local authorities are almost solely responsible for the inputs to schools, whereas workplaces will also usually put in some of their own resources too.

Moreover, in addition to revenue costs, it is important to add in the capital costs of 'safe routes' infrastructure such as pedestrian crossings, traffic calming and cycle lanes. These costs are likely to vary from school to school. Using data from the parallel project for the Department for Transport (Making School Travel Plans Work), we were able to estimate infrastructure costs per school and per pupil. These are shown in table 4.6. Provisional figures show capital costs per school ranging from £30,000 to £75,000, and capital costs per 'pupil place' ranging from £32 to £243, with an average of £95. It should be noted that none of the eight schools on which this calculation was based had received comprehensive 'safe routes' treatments, and that the costs of providing these would be higher. For example, the £30,000 spent at Broke Hall primary school in Suffolk was enough to pay for one zebra crossing and footway improvements. However, the interviewee in Buckinghamshire highlighted that in some instances, a small scale measure – such as widening a pavement – may be sufficient to address particular parental concerns, although others would undoubtedly argue that this is not always the case. Clearly, the extent and scale of engineering work needed is likely to vary from school to school.

Table 4.6: Capital cost of school travel infrastructure

School	Number of pupil places	Total capital spent on safe routes infrastructure (£)	Capital cost per pupil place (£)
Park Brow, Knowsley	386	30,000	78
St Sebastians, Merseyside	309	75,000	243
Holmemead, Bedfordshire	530	60,000	113
Knowles Hill, Devon	1156	65,000	56
Watchfield, Oxfordshire	312	35,000	112
Kesgrave, Suffolk	1450	46,000	32
Broke Hall, Suffolk	541	30,000	55
St Michaels, South Gloucestershire	585	40,000	68

Data drawn from 'Making School Travel Plans Work' case studies

4.8 Case study data about the scale of school travel work

In addition to information about staffing and budgets, there was evidence from our case studies about the level of their involvement in school travel work. This forms a useful comparison with the national figures discussed in section 4.4. A summary of the results are given in the following three tables.

Table 4.7: Proportions of schools involved in travel work in case study areas (summer 2003)

Location	Number of schools in the area*	Proportion currently working with	Predicted proportion working with in 2006.
Buckinghamshire	221	64% (142)	80% (55% at level 3, 15% at level 2 and 10% at level 1)
Merseyside	582	21%(124)	25%
York	73	59% (43)	75%

* Defined as primary plus secondary

Table 4.8: Primary and secondary school involvement in case study areas (summer 2003)

Location	% primary schools	% primary school pupils	% secondary schools	% secondary school students
Buckinghamshire	64%	62%	65%	64%
Merseyside*	23%	n/a	14%	n/a
York	55%	61%	73%	76%

* Figures for Merseyside calculated on the basis that 15% of total schools are secondaries, in line with the regional average for the North West.

Table 4.9: Levels of school involvement in travel planning work (summer 2003)

Location	% pupils in schools….		
	Developing plan	Plan agreed and/or some measures in place	Fully fledged plan inc. engineering measures
Buckinghamshire	74%	15%	11%
Merseyside*	46%	18%	35%
York	31%	54%	15%

* Done on basis of school numbers rather than pupil numbers, as pupil numbers were not available.

These figures suggest that both York and Buckinghamshire have already engaged a far higher proportion of schools than the national average (59% and 64% respectively), and have higher expectations about future levels of engagement by 2006 (75% and 80% respectively). In contrast, levels of engagement in Merseyside were closer to the national average, (21% in 2003 and 25% in 2006). This probably reflects the fact that both York and Buckinghamshire have been engaged in serious school travel work for a longer time period and that they can be considered to be relatively 'early developers 'as far as school travel work is concerned. Meanwhile, work in Merseyside is more in line with national trends.

In all three areas, levels of engagement with primaries and secondaries were roughly similar, although York has put more emphasis on secondary schools and Merseyside has put more emphasis on primaries.

In all three areas, much of the school travel work is at an early stage – and, in Buckinghamshire, the interviewee highlighted that a lot of their work will involve upgrading work at existing schools that they engage with, as well as engaging new schools. The proportion of schools considered to have fully fledged travel plans in Merseyside seemed surprisingly high compared with Buckinghamshire and York,

given the large number that they are working with and the relatively short period that they have been working with schools intensively. Possibly, this implies that the interviewees in the different areas interpreted the question differently.

If it is true that York and Buckinghamshire are early developers – whilst Merseyside's development is more recent – this implies that the plateauing of school travel plan work suggested by the local transport plan annual progress reports (at 30-40% of all schools) is unlikely to happen. Instead, as authorities gain more experience, the number of schools that they feel able to engage with seems likely to increase over time.

4.9 Effects of school travel work on car use

4.9.1 Available data about the traffic impacts of school travel work

As highlighted in section 4.5, this project was able to draw on preliminary data from the parallel Department for Transport 'Making School Travel Plans Work' project, which involved interviews with 23 local authorities (including Buckinghamshire, Merseyside and York). However, although all of these authorities collect information about travel to school, the number with usable results was more limited.

At the time of our assessment, data were available from 12 authorities that could provide information about 'all' schools in their area (or at least, a representative sample of schools). Nine of these had data about how modal choice for travel to school had changed, whilst 10 had information about the current proportion of journeys to school made by car. In section 4.9.2, this information is analysed to assess how individual authorities are performing.

At the time of our assessment, data were also received from 8 authorities about particular categories of school that have been involved in school travel initiatives. The nature of this information, and what it shows, is discussed further in section 4.9.3. It is relatively disparate, however, there seem to be some general findings, whose credibility are perhaps enhanced by the fact they derive from such different sources.

4.9.2 Effects of school travel work on car use to 'all' schools'

Information from authorities that had data about travel to all schools (or a representative sample of schools), and relevant data for regional comparisons is given in Table 4.10.

Table 4.10: Local authority results and trends in their region.

Local authority		% car use in most recent survey	% change in car use	Region	% car travel in 1999/01 NTS
Bath & NE Somerset (2001-2002)		--	"Slight" decline	GOSW	34
Bradford City (2000-2002)		36.7	+7.3	GOYH	25
Buckinghamshire (2002-2003)		37	-5-18	GOSE	37
Cambridgeshire (2002)		26.8	--	GOE	36
Devon County (2001-2003)		34	-3	GOSW	34
Norfolk County (1999)		34	--	GOE	36
Nottingham City (01/02-02/03)	Primary	32	+7	GOEM	44
	Secondary	15	-17	GOEM	17
Greater Nottingham (01/02-02/03)	Primary	37	+6	GOEM	44
	Secondary	15	-17	GOEM	17
Oxfordshire (2000)		27	--	GOSE	37
Shropshire (2000-2002)	Primary	48	+12	GOWM	38
	Secondary	17	-11	GOWM	17
South Gloucestershire (1999-2003)		--	0	GOSW	34
Suffolk (1999-2001)		30.5	0	GOE	36
York (1999-2002)	Primary	38.6	+11.9	GOYH	28
	Secondary	22.7	+0.4	GOYH	21
	All	28.6	+9.6	GOYH	25

Of authorities that conduct regular surveys of all schools, and which had data that they considered to be at least partially comparable over a period of time:

- 2 were reporting increases in car use (Bradford 7.3% over two years, York 9.6% over three years, with most of the increase occurring at primary schools)
- 2 were reporting stable levels of car use (Suffolk over two years, South Gloucestershire over four years)
- 3 were reporting declines in car use (Bath and North East Somerset "slight" decline over one year; Devon -3% over two years and Buckinghamshire, between -5 and -18% over one year) [1]
- 2 were reporting increases in car use at primary schools whilst reductions at secondary schools (Nottingham over one year: primaries + 6-7%, secondaries -17%; Shropshire over two years: primaries +12%, secondaries -11%)[2].

[1] 18% is the reduction in the proportion of students reporting that they go to school by car. In the 2003 survey, inclusion of a new park and walk category allows for some ambiguity when making comparisons between surveys. Employing the most pessimistic assumptions suggests that it is possible that total car use has only reduced by 5% overall.

[2] It should be noted that, apart from York, these were the only authorities breaking down their data into trends for primary and secondary schools. Hence, it is entirely plausible that in other authorities, travel trends are also more favourable at secondary schools compared with primary schools. However, examination of the individual case studies for the 'Making School Travel Plans Work' project has suggested that there has been considerable success at particular primary schools – indicating that there is no particular reason to assume that focusing on secondaries will be a more successful strategy. Instead, it may be that travel to secondary schools is being influenced nationally by factors such as

As a comparison with these results, National Travel Survey data for 1996/98 and 1999/01 (a period of three years) shows that car use has been stable across all schools, with an underlying pattern of an 8% increase in car use to primary schools and 10% decline in car use for travel to secondary schools.

Overall levels of car use in survey areas can also be compared with regional averages since in some cases, the main effect of the local authority's work has been to keep car use at a low level for school travel in general (as opposed to achieving particular reductions). Making these comparisons is not straightforward. For example, travel patterns are often different in urban and rural areas, and, whilst most regions will include a mixture of area types, many local authorities may be predominantly urban or rural. It is also possible for the local economic circumstances of a particular city to vary markedly from those of the surrounding area. Nonetheless, given those caveats, the following comparisons emerge.

Nottingham City and its surrounding area, Oxfordshire, Cambridgeshire, Suffolk, and, to a lesser extent, Norfolk, have all succeeded in keeping car use below the regional average.

In contrast, the average level of car use for school journeys in Bradford City and primary school journeys in Shropshire and York appear to be significantly higher than the regional average. (It should be noted that car use in Bradford is apparently rising very rapidly generally, which may mean that this is a case in point where the city is performing differently to the region).

In summary then, information from 12 areas which are all engaged in school travel work seems to suggest a mixed picture. Some (Buckinghamshire, Devon and Bath & NE Somerset) have managed to reduce car use overall. Others (Oxfordshire, Cambridgeshire Nottinghamshire and Suffolk) are holding car use at below the regional average. However, others have had less success in making an area wide impact – notably (and surprisingly) York (all schools, particularly primaries), Bradford (all schools) and Shropshire (primary schools).

This may relate to other factors 'confusing' trends, or the extent and depth of the work. Clearly local authorities vary significantly in terms of the number of schools that they have managed to engage with so far, the intensity and nature of their work, the amount of area wide initiatives they run that will affect all schools in their area etc..

It is interesting that Buckinghamshire has prioritised non engineering measures, whilst York has prioritised safer routes work, and that both authorities agree that, if the aim is short-term modal shift, Buckinghamshire's approach may be better. However, York justify their approach on safety grounds and the fact that it is expected to deliver longer term effects. Until these measures have been in place for a longer time period, it is impossible to properly assess the relative long term impacts of these two approaches.

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media condemnation of the school run, whereas local authorities' achievements at particular schools are more likely to be contingent on the policies adopted.

4.9.3 Effects of school travel work on car use to'engaged' schools'

At the time of our assessment, 8 authorities had 'before and after' data about schools which had been engaged in school travel initiatives in some way. It should be noted that authorities varied in the schools they chose to report on. In some cases, it was schools that had reached a certain level or were involved in a certain programme; in some, it was simply the schools that they had available data about; and in some, it was schools that they were proud of. Specfically, information was received about the following:

Buckinghamshire:
- All schools involved in the county wide 'Go for Gold' walking incentive scheme (number unknown)
- All schools which had reached 'Level 3' (i.e. fully fledged travel plan) and which had available data at the time of the interview (6 schools).

Cambridgeshire:
- Private schools and sixth form colleges prepared to be part of a partnership (CTEEP) that wanted to address travel, with repeat surveys undertaken in 2001 and 2003 at 7 private schools and 1 sixth form college.
- LEA schools which had been the focus of safer routes to schools work, compared with those that had not (numbers of each unknown)
- Schools taking part in Walk to School week in May and October 2002 (67 schools in May and 33 in October).

Hertfordshire:
- All schools which the local authority had received several years of data from. This constituted a total of 17 schools, including 15 that have been involved in their 'safer routes to school' programme.

York
- 60 schools that responded to their 'all schools' surveys undertaken in December 1999 and 2002
- Comparisons of changes in travel behaviour at schools where particular measures (school travel plans, new cycle parking and safety work) had been introduced between 1999 and 2002 (compared to schools where such measures were not introduced in that period). It should be noted that, in York, safety work for primaries involves the introduction of 'safety zones' outside the school entrance, whilst safety work for secondaries involves the introduction of safer routes measures.

Merseyside
- All schools for which the authority had available 'before and after' data. At all of these schools, MerseyTravel had started some school travel work, although the extent of work undertaken by the time of the surveys varied significantly (39 schools).

Knowsley

- All schools where the authority had more than one year of data (3 schools). The authority had undertaken work at all three schools, although one was still to implement its main measures at the time of the survey work.

Cornwall

- Results from a cluster of four schools that the authority had worked with in Falmouth.

Devon

- Results from 9 schools which the council considers to be exemplars of 'good practice' school travel work, although one of these schools was still at a fairly early stage of its work when the surveys were undertaken.

In addition, there were available data from all the individual schools contacted as part of the 'Making School Travel Plans Work' project. Information about individual schools from both phases of the project is relevant:

- In the early work, all schools nominated by school travel experts as 'good practice' examples were asked to complete a survey about their work. Eventually, 80 schools supplied usable before and after data (according to returns received by 3/9/03).
- Of the 30 schools then selected as representatives of good practice, 28 have usable 'before and after' data.

For all the data sources reported above, it is probable that the schools reported were keen to be involved in school travel work (i.e. there was a degree of self selection), either because of traffic problems, or other concerns such as safety, sustainability, health and environmental considerations. Hence, it cannot be argued that their experience would inevitably translate to 'all' schools. However, there is some evidence that, as an increasing number of schools become involved in school travel work in a given area, others, that were initially reluctant, become keener to be involved too. In addition, the different data sources do provide insight into some schools with intensive travel work, and some schools that will have had a much lesser degree of involvement, making some generalisation possible.

For schools involved in initiatives, the following results emerged:

- High proportions of these schools typically achieved reductions in car use: 89% of 'good practice' schools in Devon; 88% of schools in the CTEEP partnership in Cambridgeshire; 83% of Level 3 schools in Buckinghamshire; > 80% of safer routes schools in Hertfordshire; 75% of schools in the Falmouth cluster in Cornwall; 66% of all schools with results in Knowsley; and somewhere between 62 and 77% of schools in Merseyside (depending on how account is taken of car-sharing and park-and-walk trips)[3].

[3] In the case of Knowsley, the '33%' school without a traffic reduction was still awaiting the implementation of its main school travel measures, whilst, in Buckinghamshire, the '17%' school seems to have achieved a significant car use reduction in the first few years of its work, but car use has since risen again. These examples highlight that the situation will, of course, vary over time – schools at the early stages of work, and schools which have undertaken travel work which has since lapsed, may both be less likely to be showing traffic reductions.

- Reductions in car use of 20% or more are not uncommon for schools involved in initiatives, including reports of 8 schools (89%) in Devon; 6 or 7 schools (75/88%) in Cambridgeshire; 2 or 5 schools (33%/83%) in Buckinghamshire; 2 schools (50%) in Cornwall; 4 schools (27%) in Hertfordshire; and 6 or 9 schools (15/23%) in Merseyside[4].
- Several authorities quoted schools where car use had more than halved, including 2 schools in Buckinghamshire; 1 school in Devon and (possibly) 2 in Merseyside (depending on the magnitude of the car use component of the park and walk trips made to these schools).

Notably, of the 80 individual schools with data which responded to the 'Making School Travel Plans Work' project survey, 61 (76%) of these had achieved reductions in total car use. Thirty-three (41%) appeared to have achieved reductions in total car use in excess of 20%, and 8 (10%) appeared to have more than halved overall car use[5].

Of the 28 individual schools with data selected to be representative of good practice, 26 (93%) have achieved reductions in total car use, with 14 (50%) achieving reductions in excess of 20%, and 2 (7%) achieving cuts of more than 50%.

In terms of the total numbers of schools for which there are reports of measured changes in car use, the following emerges[6]:

- In terms of schools with data showing a reduction in car use, there were 26 of the case study schools from the 'Making School Travel Plans Work' project, a further 71-77 from the local authority reports, and a further 20 from the 'Making School Travel Plans Work' shortlisting process. This makes a total of 117-123 schools where car use is reported as having reduced. There are probably considerably more examples than this, both because the 'Making School Travel Plans Work'

[4] Buckinghamshire, Merseyside and Cambridgeshire included survey categories of car sharing, park and walk or both. In these cases, in the absence of actual information, conservative assumptions were made about how much of these trips should be counted as car use, in order to avoid the risk of over-estimating the traffic reduction achieved. These assumptions were that each car sharer accounts for half a car, and that 75% of every park and walk trip is made by car. When these assumptions are applied, the degree of reduction in car use achieved at some schools reduces. Consequently, two figures are given for each of these authorities. The larger number refers to the number of schools where the proportion of children reporting that they simply come to school by car has reduced by 20% or more. The smaller number refers to the number of schools where, after making conservative assumptions about the amount of more sustainable travel that will still involve car use, total car use has still probably reduced by 20% or more.

[5] These figures relate to 'total' car use – which was calculated using the same assumptions as those described in footnote 4, for those cases where the school provided data which enabled consideration of car sharing or park and walk.

[6] To calculate the figures from this section, data were amalgamated from the 30 individual 'Making School Travel Plans Work' schools selected to represent good practice, the local authority reports, and the data for the 80 individual schools received in the first phase of the 'Making School Travel Plans Work' project. Data were carefully checked to avoid double counting. Where there were differences in the results for the same school (due, for example, to differences in the time period of change being reported for that school), the data about the 30 individual schools was treated as the most reliable, then the local authority reports, and only then the results received in the initial phase of the 'Making School Travel Plans Work' project. For the local authority reports, two figures are given – because, in some cases, it was possible to calculate what individual schools had achieved in two different ways (either changes in conventional car use or, using assumptions, changes in total car use). The figures from the other two sources should relate to changes in total car use at the individual schools.

survey process is unlikely to have picked up every possible national example, and also (probably more importantly) because many schools are undertaking high quality school travel work but have simply not monitored the effects of their work.

- In terms of schools with data showing a reduction in car use of more than 20%, there were 14 of the case study schools from the 'Making School Travel Plans Work' project, a further 20-30 from the local authority reports, and a further 8 from the 'Making School Travel Plans Work' shortlisting process, making a total of 42-52 schools where car use has reduced by over 20%.
- In terms of schools with data showing that car use had reduced by 50% or more, there were 2 of the case study schools from the 'Making School Travel Plans Work' project, further 1-3 from the local authority reports, and a further 3 from the 'Making School Travel Plans Work' shortlisting process. This makes a total of 6-8 schools where car use has more than halved. Clearly, this implies that managing to reduce car use this substantially is quite rare – although there are enough reports to provide confidence that it can happen.

There were also results particular to the initiatives that schools had been involved in. Throughout the rest of this section, the terms 'conventional car use' and 'total car use' are used. Changes in 'conventional car use' are defined as changes in the number of children who record themselves as coming 'by car' in travel surveys. Changes in 'total car use' have usually been calculated by combining different categories of travel, to allow for the fact that some children have transferred to means of travel which still involve some car use – in particular, children who now arrive at school by car sharing or undertaking park and walk. As previously, calculations conservatively assume that each car sharer accounts for half a car, and that 75% of every park and walk trip is made by car.

The results about schools involved in particular initiatives show the following:

- At Buckinghamshire, all schools involved in Go for Gold have reduced car use by an average of 22%. Schools achieving what the authority regards as a Level 3 travel plan have reduced conventional car use by an average of 39% and total car use (calculated using pessimistic assumptions) by 21%.
- In Cambridgeshire, the 8 CTEEP schools have reduced conventional car use by an average of 32% and total car use by 22%; schools involved in the 2002 safe routes to school programme had car use which is 28% lower than those which were not; and, after Walk to School week (which reduces car use by about a quarter) car use remained 11% lower three weeks after the May week (67 schools involved) and 2% lower a fortnight after the October week (32 schools involved).
- For the 9 schools quoted from Devon, an average car use reduction of 28% was achieved.
- For the 4 schools involved in the Falmouth cluster in Cornwall, an average car use reduction of 19% was achieved.
- For the 39 Merseyside schools that had been engaged in school travel work in some capacity, conventional car use reduced by an average of 10.2%, whilst, using pessimistic assumptions, total car use reduced by 3.3%
- For schools in York, calculations suggest that, on average, primaries with school travel plans had car use which was 15% lower than it would otherwise have been; primaries with new cycle parking had car use which was 21% lower than it would otherwise have been; and secondary schools with safer routes work had car use which was 8% lower than it would otherwise have been.

These results suggest that when local authorities engage with schools (that are happy to be involved), there will inevitably be some schools that do not achieve positive modal shift. However, a high proportion (somewhere between 60 and 90%) can be expected to achieve positive modal shift, and there are more than an hundred schools around the country where this has occurred. Moreover, a significant percentage of them can be expected to reduce car use by over a fifth – for all schools that are engaged with, the proportion is likely to be somewhere between 15 and 40%[7].

Taking this data, the implied overall reduction in traffic that might occur across all engaged schools is likely to be in the order of 8-15%[8]. Notably, this is reasonably consistent with the previous results about all schools quoted for Buckinghamshire in section 4.9.2, where conventional car use had reduced by 18%, and using pessimistic assumptions (necessitated by the lack of any park and walk category in surveys prior to 2003), total car use had declined by at least 5%. For Merseyside, the results for all 39 schools were slightly lower (conventional car use reducing by 10% and total car use reducing by at least 3%), which is consistent with the evidence that their average degree of engagement with the surveyed schools has probably been less.

Meanwhile, for schools that are engaged in intensive programmes or that reach a certain 'level', achieving an average reduction in car use across all schools of over a fifth is common, as shown by the results from schools in Devon, the Falmouth cluster in Cornwall, the CTEEP partnership schools and safer routes schools in Cambridgeshire, Level 3 schools in Buckinghamshire and the 28 individual schools surveyed for the 'Making School Travel Plans Work' project. There are also a number of rarer cases where car use has actually halved – indicating that very dramatic levels of change can be achieved.

Meanwhile, the experience of Buckinghamshire and Cambridgeshire highlights that promotional programmes aiming to involve a large number of schools (such as the Go for Gold walking incentive scheme and Walk to School week) can also have substantial effects.

4.9.4. Overall effects of school travel work on car use

In terms of reductions in car use for school travel across the whole of a local authority area, there is a mixed picture. Some have managed to reduce car use overall, whilst others are holding car use at below the regional average. However, other areas have

[7] The 60-90% range is the full range from all the examples – Merseyside provides the lower end of the range whilst figures of more than 80% were derived from five different sources – making the higher end of the range credible. For the 15-40% range – 15% is the lowest figure derived from any local authority. There were a number of figures greater than 40% quoted that could have been used for the higher end of the range, however, given the sources (and number of schools involved), it was less clear that this figure was representative. Consequently, 40% has been chosen as a more credible figure – deriving from the data about 80 individual schools originally submitted for the 'Making School Travel Plans Work' project.

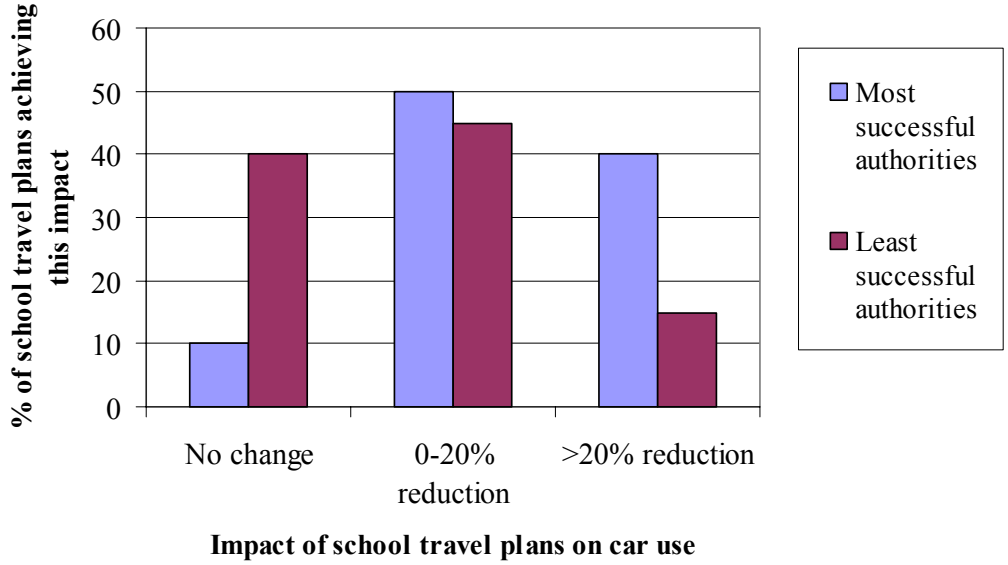
[8] This has been calculated by assuming a) that 40% of schools experience no modal shift, 45% experience a car use reduction of between 0 and 20% (i.e. on average, 10%), and that 15% experience a car use reduction of over 20% (assumed, conservatively, to be an average of 25%); and b) that 10% of schools experience no modal shift, 50% experience a car use reduction of between 0 and 20% (i.e. on average, 10%), and that 40% experience a car use reduction of over 20% (assumed, conservatively, to be an average of 25%).

had less success in making an area wide impact. There is some (tentative) evidence, which suggests that prioritising awareness raising and incentive schemes may be more effective at delivering short term modal shift, than engineering work designed to improve safety. However, many authorities are prioritising safety work, in order to reduce accident risk, because they believe it to be a necessary condition for sustained and long term modal shift, and, in some cases, because the consultation process for introducing engineering work is seen as an awareness raising mechanism anyway.

In terms of the degree of modal shift - when local authorities engage with schools (that are happy to be involved), not all schools will reduce car use. However, a high proportion (between 60% and 90%) can be expected to achieve positive modal shift, and a significant percentage can be expected to reduce car use by over a fifth – for all schools that are engaged with, the proportion is likely to be somewhere between 15 and 40%. This leads to a range of 'typical' profiles for local authority work on school travel, as shown in Figure 4.2.

These profiles imply that the overall effect of car use at all engaged schools is likely to be a reduction in the order of 8-15%. It should be noted that these profiles relate to schools that are involved in school travel work, not all schools in the area. Moreover, they relate to the profile for schools where travel work has developed sufficiently that it could be expected to have made an impact. (Clearly, in an authority where the majority of schools are only just starting work, the effects on travel are unlikely to immediately materialise.) It also presupposes that contextual factors remain relatively constant – for example, that there has not been a major cut in school bus provision across the authority which could have a major counterproductive effect on school travel work.

Figure 4.2: Typical profiles of the effects of local authority school travel work on car use



These profiles relate to the effects from 'typical' school travel work. Meanwhile, for schools that are engaged in intensive programmes or that reach a certain 'level',

average reductions in car use of over a fifth are common. There are also a number of rarer cases where car use has actually halved – indicating that very dramatic levels of change can be achieved.

In addition, promotional programmes aiming to involve a large number of schools (such as walking incentive schemes and Walk to School week) can also have substantial effects.

These findings are broadly consistent with the literature reviewed in section 4.2.

There is one final issue in relation to the car use reductions achieved by school travel – namely the proportion of car journeys which will still be made because the parent continues to make the trip. This may apply particularly to journeys where the parent is driving to work, and was previously dropping the child at school on the way to work. There has been little direct investigation of this issue, although there have been some assessments of how many school journeys are simply home-school-home. According to NTS data quoted by Bradshaw and Jones (2000), only about a third of school escort journeys made by car are not made solely for the school run, although they also quote a number of other surveys which suggest different results. It must undoubtedly be the case that some car journeys are still made – however, the number of these is important in terms of how seriously this issue needs to be considered. In addition, the extent to which the school run is causing deviation in route is significant – since most school journeys are relatively short, it is plausible that the home-school-work deviation is nearly equivalent in distance to a home-school-home trip anyway. Finally, a number of commentators have highlighted that the need to undertake the school run is often seen as a constraint on why travel to work by an alternative means is not possible. Consequently, initiatives aimed at addressing school travel could, in some cases, make travelling to work by an alternative means more viable. It is notable that two of the case study areas are starting to link their work on school and workplace travel, as discussed in section 4.11.

4.10 Other effects from school travel work

In addition to achieving modal shift, school travel work is commonly associated with achieving a wide range of benefits. These were identified in the literature and the three project case studies as follows:

- **Improved safety**: school travel work can result in reductions in both the perceived danger of travel near schools and actual accidents. Specifically, in York, the introduction of school safety zones around primary schools appear to have approximately halved the number of 8-9-year-olds reporting that they have been involved in a traffic accident (from 6.0% to 3.6%). In Merseyside, there have also been improvements in accident rates, with the number of children killed or seriously injured in road traffic accidents reducing from 216 (1994-98 average) to 137 in 2001, although it is difficult to know how much of this reduction can be attributed to school travel work.

- **Improvements in road safety skills**: school travel work can help to improve pupils' road safety skills. For example, in Buckinghamshire, walking incentive

schemes are associated with pedestrian training, cycle trains are associated with cycle training and the county is also piloting a sixth form drivers scheme.

- **Increased independence for children**: improvements in both safety and pupils road safety skills can, in turn, increase parental confidence about letting their children travel by themselves and result in increased independence.

- **Health and fitness benefits:** increases in walking and cycling are generally associated with health and fitness benefits. As discussed in section 4.3, work in Hertfordshire is quantifying the extent of these benefits.

- **Improved attendance and ability to learn**: school travel schemes are often associated with benefits for children's general education. Specifically, schemes in Merseyside have been associated with improved attendance and punctuality at school. There are also numerous anecdotal reports that children are brighter and more alert when they arrive if they have walked or cycled, and more able to settle down and learn if they have 'burnt off excess energy'. (It has been hypothesised that this may be particularly true for children with attention deficit disorder).

- **Greater knowledge of environmental and citizenship issues**: school travel work can be associated with particular educational benefits, in terms of improved awareness about environmental issues and citizenship. This was identified as particular benefit in Buckinghamshire. Where pupils are engaged in consultation and their ideas are taken on board, this can also resulting improvements in self-esteem. There has been school travel work specifically aiming to involve children with low self-esteem in Devon, with positive results reported.

- **Community benefits**: school travel work is often associated with improved community integration and empowerment, with spin-off benefits in the wider area. These benefits were specifically mentioned by all three case studies. In particular, in Merseyside, it was mentioned that school travel work often helps parents and neighbours to get to know each other, that children from local areas now play out with each other more, and that parents become active in school and community activities often the first time. At one school (St Sebastians) school travel work has resulted in new lighting in the surrounding area which has benefited far more people than just the school pupils, and the IT room has been opened to the whole community outside school hours.

- **Increased social inclusion**: school travel work is seen as socially inclusive, providing options which are available to all, and, in some cases, local authorities are specifically targeting more deprived areas to improve their options. Again, the social inclusion benefits of school travel work were mentioned by all three case studies. Specifically, in Buckinghamshire, travel plans were described as "a great leveller", on the basis that everybody can enjoy the health benefits of walking and cycling, and that they have enabled the team to look at safety issues for groups who might otherwise not come forward. In York, there are specific examples where school travel work has helped socially deprived areas, including reducing congestion for one school that is an area with pockets of deprivation; and improving access routes to 2 colleges whose catchment areas include more

socially excluded students. The cycle maintenance training project in York is also being run in the 4 most deprived secondary schools of York.

- **Increased awareness of the potential for change**: specific school travel work can also raise general awareness of school travel issues. For example, in Buckinghamshire, the interviewee commented that people were initially unaware about potential initiatives, such as walking buses. Now, however, there is greater familiarity, which is resulting in more schools requesting measures that will benefit their pupils. In a Mori survey in October 2002, safe routes to school came out as a top priority for local transport (identified by 36% of respondents).

4.11 Synergies between school travel work and other policies and issues

There are various synergies involved in school travel work.

First, school travel work clearly benefits from related measures, including measures to improve alternative options to the car and measures to manage the car. Specifically:

- in Buckinghamshire, the introduction of special parking measures in High Wycombe in Aylesbury were seen as something that has encouraged parents to think twice about driving. For example, Hamilton School in High Wycombe now requires parents who drive to have a parking permit and to park in a specific area.
- In York, schools were seen as having benefited from the development of pedestrian and cycle networks, park and ride sites, village safety plans, speed management initiatives and public transport initiatives.

In all areas, road safety measures are commonly seen as complementary with school travel work.

It was also noted that school travel work can increase the acceptability of such hard measures. For example, in York, the interviewee commented that in the context of school safety zones or safe routes to school, people are more inclined to support traffic calming or the extension of cycle paths where they might otherwise oppose them.

School travel work can also benefit from other soft initiatives. Specifically, improvements in public transport information and marketing were mentioned as a useful synergetic policy initiative occurring in Merseyside. There is also a growing tendency for some areas to link their work on schools and workplaces, in order to enhance their effects. Specifically:

- in Merseyside, the same team is working on school and workplace travel plans and they are deliberately starting to informally target schools and workplaces in particular neighbourhoods at the same time, to try and maximise the benefits of their work
- in York, the interviewee reported on work at a primary school, where a new cycle path has provided to link to two main arterial routes and good off-road cycle routes. As a result, the school reports that many parents are cycling to school with their children and then carrying on to work in town, rather than travelling by car.

As well as synergy with other initiatives, there are also examples of specific soft measures being specially adapted for school travel work. Specifically:

- in Buckinghamshire, the Bucks CarShare scheme is now being publicised for schools, including providing sixth formers with information.
- in York, at the time of the interview, the council was planning to produce individualised journey planners for children starting secondary school.
- in Buckinghamshire, at the time of the interview, the council was about to start work on personalised travel planning for students over the age of 16, to raise awareness of public transport options for students travelling long distances to school, as they have identified lack of awareness of public transport amongst such students as a particular issue.

School travel work was also seen as a good way of raising awareness and increasing the acceptability of more sustainable transport policies. The Merseyside interviewee expressed frustration that the work was not given high priority, given that it has this effect.

Finally, school travel work clearly has synergistic benefits with other areas of policy, including health and education. It is notable that in York, a member of the primary care trust was originally involved, and in Merseyside, some of the funding comes from the Health Action Zone.

4.12 Relationship between school travel work spending and impact

In setting out to evaluate the relationship between spending, scale of school travel plan work and effectiveness, we used the local authority figures about the proportions of schools that they had engaged with. However, we did not use their assessments of how advanced their travel plan work was, as we were not convinced that interpretation of 'travel plan level' was consistent across authorities. Instead, to calculate impacts, we used the data range suggested by work in a number of authorities. This suggests that, at current levels of engagement, typically, 10-40% of schools with travel work will not achieve positive modal shift, 45-50% will reduce traffic by between 0 and 20%, and 15-40% will cut traffic by over 20%, with some schools achieving reductions in traffic of 50% or more. Crudely averaging these results suggests that travel work might be expected to cut traffic levels by between 8% and 15% - figures which are approximately in line with the averages produced by Buckinghamshire and Merseyside. Consequently, we developed two models – one of which assumed that the average cut in car use achieved by the local authorities was 8%; the other assuming that the average cut in car use was 15%.

We assumed that at the schools where school travel work has taken place, behaviour change has grown linearly from zero when the programme was established, to the position in the current year. We further assumed that the total investment so far would result in behaviour change in subsequent years, but that this would decline at a rate of 40% per year.

The cost of achieving this behaviour change was taken as the *total* spending on revenue and capital. Revenue expenditure was calculated over the years the

programme had been running (estimated on the assumption that expenditure grew linearly between the first and current years).The capital costs of infrastructure measures were annualised at 3.5% for the period that the school travel work had been taking place.

Table 4.11 sets out the calculation of costs and impacts.

Table 4.11: Calculation of cost-impact ratios for school travel plans

	Bucking-hamshire	Merseyside	York
length of time scheme has been running (years)	4	2	5
estimated total expenditure, with capital costs annualised # (£)	£429,465	£379,673	£465,973
pupils affected by travel plan in current year	47000	43000	17609
% travelling by car*	39	45	26
number of pupils travelling by car affected by travel plans	18330	19350	4578
Model A: low estimate – 8%			
kilometres saved in current year ~	4692480	4953600	1172055
total kilometres saved +	16423680	9907200	4688220
cost per kilometre saved (pence)	2.6	3.8	9.9
Model B: high estimate – 15%			
kilometres saved in current year ~	8798400	9288000	2197603
total kilometres saved +	30794400	18576000	8790413
cost per kilometre saved	1.4	2.0	5.3

Total expenditure is estimated, assuming linear growth from expenditure in first year to expenditure in current year, with capital costs annualised at 3.5%. The expenditure data used as the basis for this calculation are given in table 4.4.
* For Buckinghamshire and York, this is the earliest car mode share for all schools recorded in a county wide survey (1999 in both cases). For Merseyside, it is the average figure for all the schools that Merseyside has engaged with (2001/02) – it does not include any car use associated with park and walk, given that this cannot be calculated specifically. (This makes our estimate of cost relatively conservative – i.e. it potentially errs on the side of 'expensive').
~ In calculating car mileage saved per year, we assumed 200 school days per year. 1999/2001 NTS data gives the average journey to school distance by car as 4km. Hence annual car distance saved for each pupil who stops travelling by car = 200 x 8 x 2 = 3200 km per year. This assumes two return trips from home to school each day. As discussed in section 4.9.4, it should be noted that some car escort trips would be made anyway, as they are part of a journey elsewhere. However, given an absence of data, the issue of deviation and the fact that there could be some traffic gains in the opposite direction – from work journeys previously made by car converting to other means, no account of the issue is taken.
+ 'total kilometres saved' assumes linear behaviour change in car kilometres saved, from zero in year 1 to current year figure, plus some behaviour change in future years, declining by 40% per year after current year if no further money is spent.

This table shows that cost-impact ratios range from 3-10 pence per kilometre saved under the more conservative assumption of travel plan effectiveness (model A), or 1 - 5 pence with the less conservative assumption (model B). The figures for York are higher than Merseyside and Buckinghamshire, largely because lower car mode share in York means that the number of car escort trips available to be influenced at each school is smaller.

However, it should be noted that this method of calculation (employed throughout the report) to some extent 'disguises' the up-front investment in capital expenditure needed. Evidence from 'Making school travel plans work' suggests that most

authorities see engineering measures as an important part of their work with schools. They are needed as a way of engaging schools, allaying (justified) parental concerns about road safety, maximising the effects of softer measures and locking in long-term benefits.

Consequently, as an alternative way of assessing costs, we also looked at how much revenue and capital funding the case study authorities might need to spend in order to influence the entire school population (table 4.12).

Table 4.12: Revenue and capital budgets needed to work with all schools in case study areas, compared to current budgets (summer 2003)

	Total pupils in area	Annual revenue budget required to work with all pupils *(£)	Ratio of required revenue to current revenue budget	Total capital spend required to deliver some safe routes measures to all schools+	Number of years required to deliver some safe routes measures to all schools, with current capital budgets
Buckinghamshire	74847	£299,388	1.6	£7,110,465	36
Merseyside	240000~	£960,000	6.2	£22,800,000	35
York	26179	£104,716	1.7	£2,487,005	4

~ Figure for total pupils in Merseyside is an estimate, based on number of schools
* Annual revenue budget required to work with all pupils based on spending £4 per head
+ Capital spend required to deliver some safe routes measures (but not comprehensive safe routes treatment) to all schools in the local authority area, based on a capital spend of £95 per pupil place.

For revenue costs, we assumed local authorities would need to spend roughly £4 per head each year. Under this assumption, budgets need to rise slightly in Buckinghamshire and York (to 1.6 and 1.7 times the 2003 revenue budget, respectively). Merseyside, with its much larger school population, requires a budget about six times the current figure. Although current budgets are not sufficient to reach the whole school population in any of the case study areas, they are much closer to the necessary sum than for workplace travel plans.

For capital spend, we made the assumption that infrastructure spending of £95 per pupil place is required to provide a basic level of safer infrastructure. Under this assumption, the current rate of capital investment in York would be sufficient to provide some basic 'safe routes' measures at every school within about four years. (This makes no allowance for the measures already in place in York.) However, capital investment at current levels in Merseyside and Buckinghamshire would take about 35 years to provide basic 'safe routes' measures at every school. Put another way, the capital budgets in these areas would have to nearly quadruple to be able to provide basic infrastructure improvements for every school within the next decade, if that was what the authorities concerned wished to do.[9]

[9] Recent additional funding provided by the Department for Transport directly to schools will help provide some 'micro' infrastructure such as cycle shelters, but will not be sufficient to fund safe routes infrastructure such as traffic calming and cycle lanes.

4.13 Future impact of school travel work

The future impact of school travel work depends on the number of schools where school travel work would be appropriate and effective, and the average effectiveness of travel plans at these schools. These issues are discussed below.

4.13.1 What proportion of schools might be covered by travel plans?

The three case studies gave varying estimates of the proportion of schools that might be covered by travel plans in future, but all were reasonably confident that coverage would grow substantially.

Buckinghamshire: In Buckinghamshire, the interviewee estimated that 55% of schools would have fully-fledged 'level 3' travel plans by 2006, with 15% of schools at level 2 and 10% at level 1. About 20% of schools would not have a travel plan. By 2011, she felt that 95% of schools would have a fully-fledged level 3 travel plan. Consequently, only 5% were not expected to be involved in travel planning. It was anticipated that these schools would be much more difficult to engage with, for various reasons. These estimates were based on the assumption that resources for school travel planning would remain at least the same as at present.

Merseyside: Merseyside has a target that about 25% of schools will have a travel plan by 2006. This is based on the assumption that resources will remain about the same as at present, and on a pragmatic assessment of the rate at which schools become engaged with the programme. No assessment was made of the likely take-up of travel plans in 2011.

York: In York, the interviewee estimated that about 75% of schools would have a travel plan by 2006, with 100% coverage by 2011. She also felt that the proportion of schools with physical 'safe route to school' engineering measures would increase. About 20% of schools might have safe routes by 2006, rising to about 75% by 2011. Again, this was based on the assumption that resources would remain about the same as at present.

Taken overall, assuming current levels of resources, Merseyside aims to reach 25% of schools by 2006, whilst the goals are much higher for Buckinghamshire (80%) and York (75%). Moreover, both Buckinghamshire and York expect to have achieved 95-100% coverage by 2011. Buckinghamshire andYork also expect the proportion of 'fully-fledged' travel plans to increase – with 95% of Buckinghamshire schools to have level 3 travel plans and 75% of schools in York to have safer routes work, by 2011. The future effectiveness of travel plans is discussed below.

4.13.2. Future effectiveness of school travel plans

York: The York interviewee felt that if funding for school travel plan work was increased, the council would be able to offer a higher quality of intervention for each school. They would work with the same number of schools, but the behaviour change achieved would be greater. She estimated that if resources were not a constraint, it would be possible to halve levels of car use at half of all schools (presumably with

smaller reductions in car use at other schools). This estimate was based on the proportion of schools and communities that have the interest and capacity to become actively involved in school travel planning, and her perception of the possible behavioural change that can be achieved. We infer that it would imply a reduction in overall car mode share for children travelling to school in York from 29% (the figure for 2002) to 22% or less. To achieve this maximum impact, the York interviewee suggested the council would need to increase its staffing from seven full-time staff to nine full-time staff working on school travel planning and safe routes, and also increase the associated capital funding.

Buckinghamshire: in Buckinghamshire, it was reported that, for schools with fully-fledged 'level 3' travel plans, the average reduction in car use was between 21% and 39% (depending on the magnitude of the car component of park-and-walk trips). At present less than 20% of schools in the county have a level 3 travel plan, but if 95% had a travel plan at this level (which the interviewee suggested would be possible by 2011), we estimate overall car mode share for the trip to school in Buckinghamshire could fall from the current figure of 37% to somewhere between 29% and 23%. This assumes the effectiveness of level 3 travel plans at individual schools would average about the same as they do now.

In summary, then, evidence from both Buckinghamshire and York suggests that, in the future, it would be feasible for a very significant proportion of schools in these areas to have travel plans, resulting in very substantial reductions in car use.

4.14 Key issues for scaling up work on school travel

In general, interviewees seemed positive and optimistic about the potential to scale up delivery of travel plans. The main issues likely to influence the success of school travel planning were as follows.

- **Willingness of schools to engage with the process**

All the interviewees pointed out that their work could only be effective if schools were willing to engage with the travel planning process. The Buckinghamshire interviewee also highlighted that schools need a certain amount of time to introduce travel plans, and that, to some extent, this will also condition the speed of progress. One interviewee suggested that schools should be required by OFSTED to draw up travel plans, as part of their health and safety responsibilities to their pupils. Others have suggested that there should at least be clear criteria within OFSTED whereby schools with travel plans will always receive positive feedback for good work, (as opposed to the current situation where OFSTED inspectors can choose whether or not to comment on school travel work. There are reports of schools losing motivation because their travel work, which has been commended in other contexts, has not been acknowledged in their OFSTED report at all).

- **Funding**

Lack of funding was raised as an issue less often than by workplace travel plan co-ordinators, reflecting the fact that in general, the school travel plan case studies had allocated quite significant resources to their work with schools. Nevertheless, one interviewee pointed out that long-term security of funding was vital to permit strategic planning of school travel planning work. Capital funding for associated infrastructure

has also been highlighted as important, particularly as this is seen as one of the concrete benefits that local authorities can offer schools in return for their engagement.

- **Use of the planning system**

The Buckinghamshire interviewee pointed out that in two-tier authorities (where the highway authority is not the same body as the planning authority), the planning system is not always used as effectively as it could be to require schools to adopt travel plans. Government could help by reviewing and strengthening PPG13, to encourage more consistent interpretation by planning authorities.

- **Restraint measures**

Two interviewees felt that the absence of traffic restraint measures, such as parking management, and lack of political will to re-allocate roadspace to pedestrians and cyclists, meant school travel plans were less effective than they could be. The fact that every school has to make a special case for 20mph limits and/or parking enforcement outside the school gates was also raised. It was argued that the position should be reversed, with guidance highlighting that such measures should be regarded as the norm – with schools only needing to make a special case if they want higher speed limits or a lack of parking measures.

- **Parental preference**

One interviewee pointed out that national policy to increase parental choice of schools has made it more difficult to get pupils to school by bus, foot or cycle, and that this is likely to limit the effectiveness of school travel plans. Several interviewees argued that their education authorities needed to be made more aware of school travel plan work in general.

- **Advertising and marketing**

One interviewee argued that the Advertising Standards Agency could help by stopping advertising based on the school run, together with advertisements that denigrate cyclists and give unrealistic glamour to car use.

4.15 Policy implications relating to school travel

Our interviewees felt that the following policy measures would be helpful in encouraging more widespread and effective school travel work:

- The possibility of requiring schools to adopt travel plans, as part of their health and safety responsibilities to pupils, could be explored. As a minimum, OSFTED could be required to acknowledge good school travel work.
- There may be potential to strengthen the wording in PPG13 to encourage more consistent application by planning authorities in relation to schools.
- Encouraging local authorities to consider school travel work as a reasonably long-term programme would help to provide the security of funding and other resources that permit strategic planning.
- To ensure that school travel work is successful, it is important that local authorities plan appropriate revenue and capital budgets that allow measures to be implemented which emerge from school travel planning.

- National government could provide a stronger policy steer about the desirability of traffic restraint measures outside schools, such as parking restrictions or speed limits or traffic calming.
- The transport implications (including the costs) of parental choice and increasingly specialised schools need to be factored into policy decisions on these topics.

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