

## ANNEX 2:

# Travel Behaviour Research & Consultation

## 1 Introduction

As part of the 'Darlington: A Town on the Move' initiative, the Council commissioned a specialist market research consultancy, Socialdata to undertake a major piece of research work in partnership with Sustrans. This travel behaviour survey was undertaken with 4,269 people during the period September to December 2004 across the 20 urban wards in the Borough followed by in depth attitude research on a sub-sample of 406 residents.

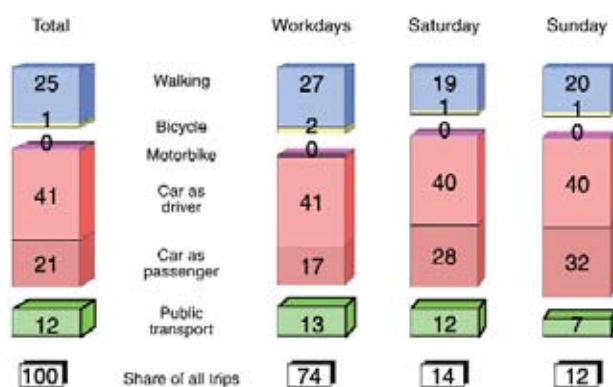
The behavioural data gives a representative picture of day-to-day travel patterns of residents of the Darlington urban area. On an average day people make 3.0 trips with 5.3 legs, performing 1.7 out-of-home activities. Per day they spend almost one hour (57 minutes) travelling per person covering an average distance of 22 kilometres.

The travel behaviour of most people is quite simple: 40 % of all people have just one journey per day with only one out-of-home activity. More than three quarters (77 %) of all journeys are just for one activity. In total 84 % of all trips start from home or lead back to home. Only 16 % of all trips are between

Figure 1

### Mode Choice by Day of the Week

Darlington



two out-of-home destinations.

Leisure accounts for nearly one third of all trips made by Darlington residents (31 %), shopping for nearly one quarter (24 %) and travel to work for one fifth (20 %). Travel to school or college accounts for 10 % of all trips.

Figure 1 shows the distribution of activities across days of the week.

On an average day a quarter of trips made by Darlington residents are on foot (ie a genuine walking trip), while just 1 % are by bicycle. Motorised private modes (car as driver or passenger, motorbike) account for almost two thirds of all trips; the majority of these trips are made by car as driver (41 %). Travel by car as passenger accounts for about one fifth of all trips (21 %) and less than 0.5 % are trips by motorcycle. Public transport is used for 12 % of all trips.

Figures 2 and 3 show total modal split / mode choice by day of the week and mode choice by trip purpose respectively.

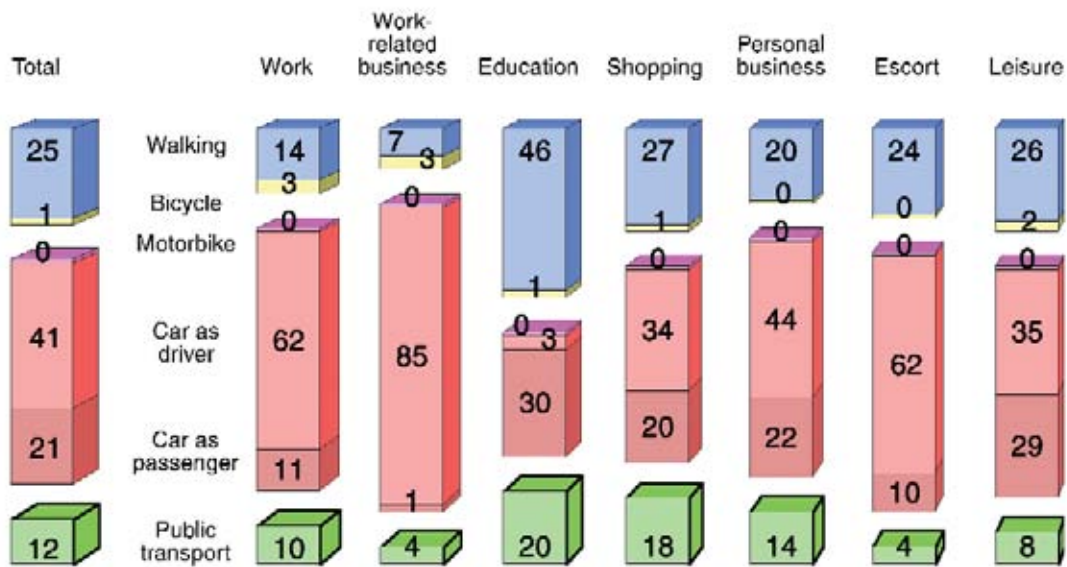
Figure 2

### Activities by Day of the Week

Darlington



Figure 3  
**Mode Choice by Trip Purpose**  
 Darlington



## 2. Analysis of the use of different travel modes shows that:

- Walking trips are more common on week days than at the weekend and for education trips, among younger people and those not employed.
- The share of walking trips is low on the journey to work and among employed men.
- The mode share of car driver trips is highest on work, work-related business and escort trips, and among employed men. (68 % of all their trips) Employed women also frequently use the car as driver (50 % of all their trips).
- Public transport in Darlington is used mostly for education and shopping trips (the latter especially to the town centre). Not employed, retired and younger people use public transport more than average.

## 3. The research also reveals the importance of short, local trips:

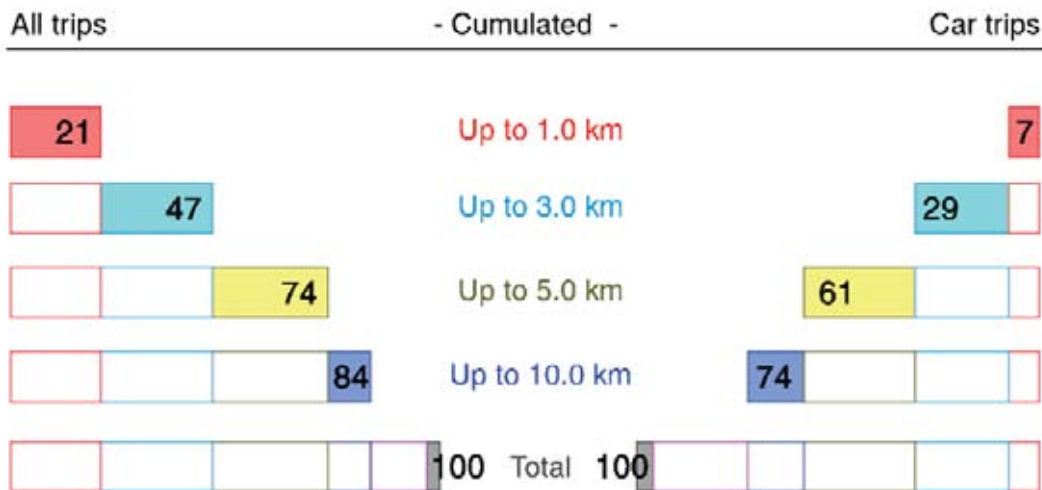
- Around one fifth of all trips (21 %) by Darlington residents are no further than one kilometre and nearly half (47 %) of all trips are no longer than three kilometres. Almost three quarters of trips (74 %) are in the range of five kilometres and another 10 % are between 5.1 and 10.0 kilometres. Only one sixth of all trips are longer than ten kilometres.
- On more than three quarters (77 %) of all their trips Darlington residents remain within the Darlington urban area, (ie the trips begin and end in the town). The average distance of these trips is about 3 kilometres.
- The town centre is the destination or starting point for 14 % of all trips made by Darlington residents. The share of public transport for trips to or from the town centre is much higher than for all trips (32 % compared to 12 %). This public transport share is even higher for shopping trips to or from the inner city (39 %).

Figure 4 shows the distribution of trips by distance and the percentage of those trips by car.

Figure 4

## Trips by Distance

Darlington



### 4. The analysis also shows how much, why and where cars are used by Darlington residents for their daily travel needs:

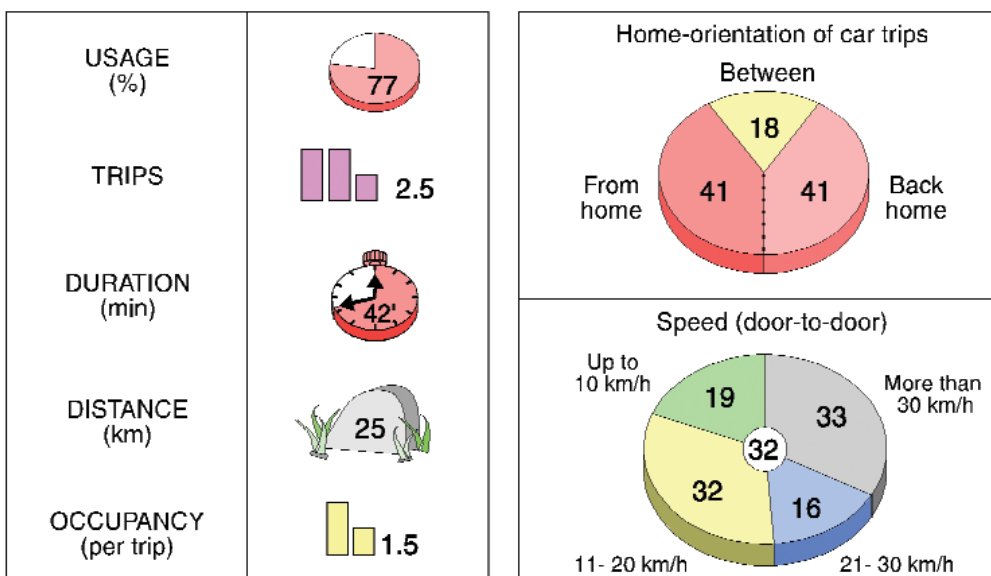
- Three out of four privately owned cars in Darlington (77 %) are used at least once a day.
- Each car is used for an average of 2.5 trips with a total duration of 42 minutes per day. The average distance covered for everyday car trips (excluding commercial and

long-distance trips) is 25 kilometres per day, and each car is occupied by an average of 1.5 people per trip (including the driver).

- Nearly a third of all car trips by Darlington residents (29 %) are less than 3km and two thirds were within the town.
- Of those car trips within the town, over half (56 %) were for shopping and leisure purposes and a quarter for work.

Figure 5 details average levels of car usage.

Figure 5



### Car Usage

Darlington; per (private) car/day

## 5. In depth study

The in-depth study shows that nearly all residents recognised an increase in car traffic in Darlington in the last few years, and the majority perceived this negatively. In the case of traffic planning conflicts between the car and sustainable travel modes a large majority of residents would support measures for public transport use, three out of four would support improving measures for cycling and more than four out of five would support improving measures for pedestrians.

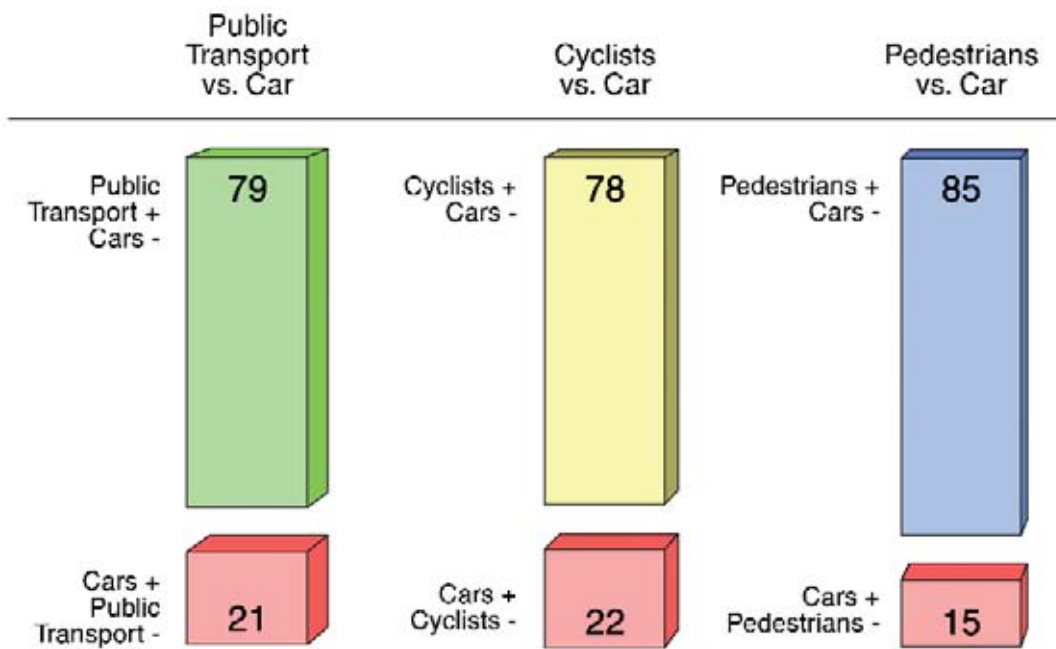
Public transport in Darlington is considered to be important for the town's residents, and a majority agreed that more improvements should be carried out. The promotion of sustainable travel modes was considered by six out of seven to be a priority in transport policy/planning.

Figure 6 shows residents response to questions on traffic planning priorities.

Figure 6

### Traffic Planning Conflicts

Darlington



## 6. Potential for changing travel behaviour

The research also conducted a "reality check" of the alternative travel options for every trip recorded in the travel diary surveys. This analysis was supported by follow-up interviews identifying the awareness, perception and choice barriers currently preventing individuals from using real alternatives.

The analysis reveals that in principle significant shifts in travel behaviour are possible, for example:

- Seven out of ten of all trips could be undertaken by sustainable travel modes; or
- Around four out of five trips could be made by motorised private modes.

trips are made by car (as driver or passenger) and 38 % by the alternatives (walking, cycling and public transport).

The in-depth research also showed that more than half of current car trips within Darlington are in principle replaceable by sustainable travel modes as follows:

- a quarter by public transport,
- a third by cycling and
- a fifth by walking.

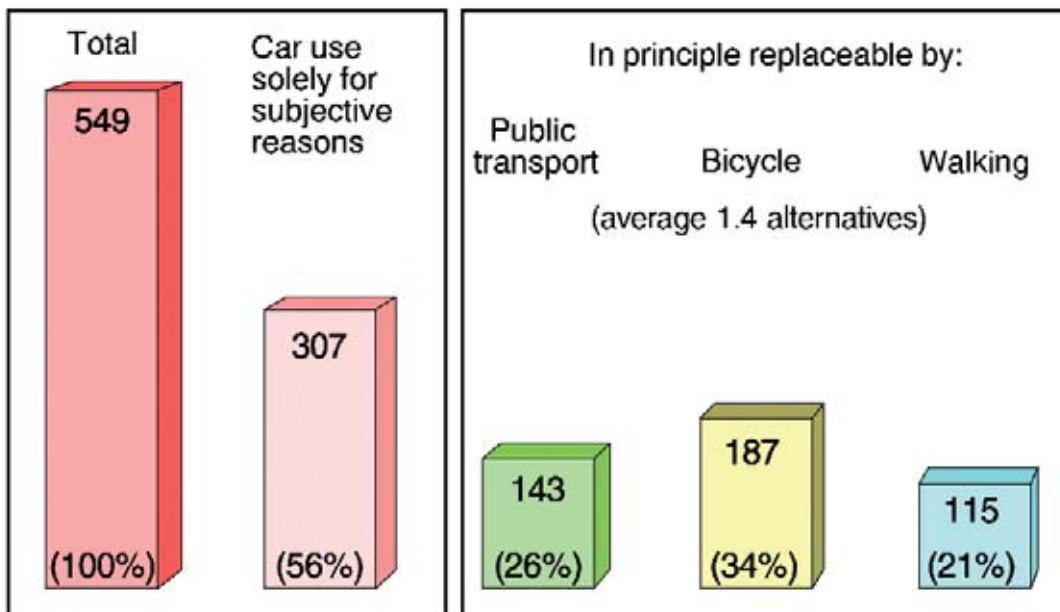
Figure 7 shows details the survey findings on the potential for a switch from car trips within Darlington ( an average of 549 car trips per person year) to sustainable travel modes.

The current travel patterns in Darlington show that 62 % of all

Figure 7

## Car Trips (Year)

Darlington; trips within Darlington



## 7. Analysis of the reasons individual trips are not made by public transport.

Figure 8 details the reasons given by residents for choosing or not choosing public transport for specific individual trips.

Figure 8 **Situations of Mode Choice**  
Darlington



Constraints (e.g. carrying large parcels or using the car for business reasons) are the reason for almost a third of all trips (29 %) not being potential public transport trips. For 41 % of all trips there is no adequate public transport available or the service time makes it unavailable.

All these reasons are objective reasons that cannot effectively be solved or will require system improvements.

This means that for the remaining 18 % of all trips there are subjective reasons preventing the use of public transport. For half of these trips, lack of information was the main reason public transport was not used, meaning that that an additional 9 % of all trips could be undertaken by public transport if people were better informed. This would bring the overall mode share of public transport to 21 %.

In 2 % of cases perceptions of time are the reason for not using public transport. Costs are often considered too high by the general public, but it was rarely mentioned in this analysis as a reason for not using public transport (less than 0.5 % of all trips). Perception of lack of comfort is also hardly mentioned as a reason for not taking public transport (1 %). For 4 % of all trips, various other subjective reasons (prejudices, attitudes, etc.) hinder the use of public transport.

This leaves a share of 2 % of all trips for which there is a 'free of choice' decision not to use public transport – that is, people are informed and have no negative perceptions about public

transport, but still choose to use the car.

One third of all trips with public transport are currently free of choice (4 out of 12 %), 3 % are subjectively bound and 5 % are "objectively" bound ("captives"). This means that a remarkable share of the current public transport demand could also use another mode of transport.

### 8. Analysis of the reasons individual trips are not made as a pedestrian.

In principle one in five car trips within Darlington (21 %) are replaceable by walking. Further inquiries revealed reasons why the car is chosen even though there are no constraints and walking is a viable alternative<sup>1</sup>.

Figure 9 details the reasons given by residents for not choosing walking for specific individual trips.

For a third all possible walking trips (33 %) the car is used instead because of perceived time reasons, ie it is subjectively judged that it takes too much time to walk. Perception of poor walking infrastructure and a low estimation of comfort (inconvenience, emissions / noise from cars, etc.) were seen as barriers against walking for only 2 % of the relevant trips. By contrast community climate<sup>2</sup> was a far stronger factor influencing the decision not to walk (11 % of trips).

Car trips with no constraints, walking possible (21%)

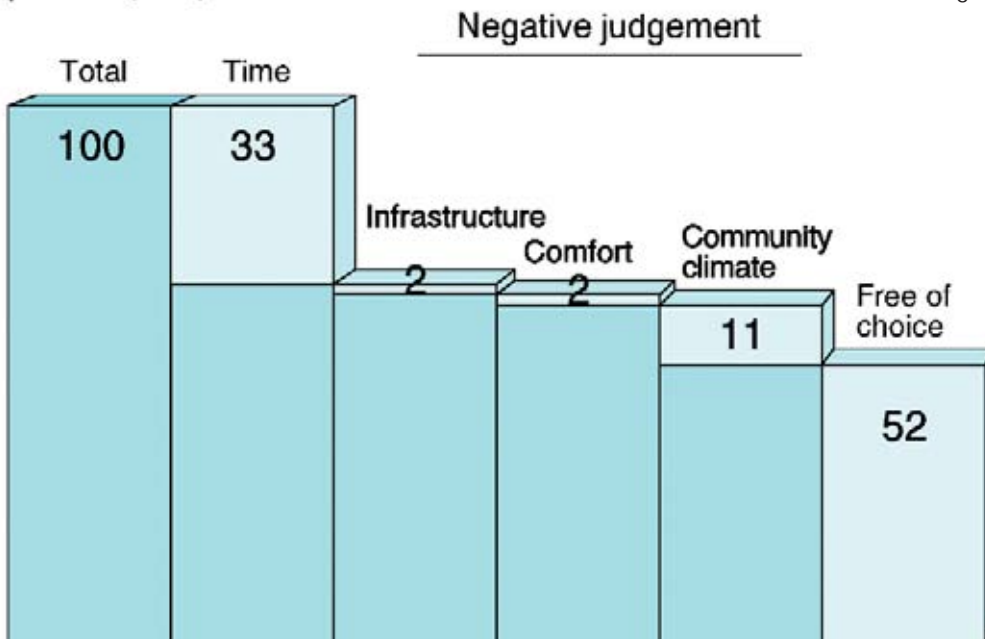


Figure 9

Potential for Trips on Foot Darlington; trips within Darlington

<sup>1</sup> The distance assumed to be reasonable to walk is 2 km, around double the average distance of all walking trips.

<sup>2</sup> Local culture – for example a car may be used as the mode of choice in order to display financial status.

This implies again that hard infrastructure measures will only have lasting success if they are accompanied by appropriate 'soft' measures to influence people's travel choices.

Of all potential walking trips, 52 % are 'free of choice' meaning that the car is used for no obvious reasons. The potential of free-of-choice trips for walking is stronger than that for cycling and public transport, so the possibility for mode shifts initiated by soft measures is high.

## 9. Analysis of the reasons individual trips are not made by cycle.

For 34 % of all trips currently undertaken by car (within Darlington) there are no constraints against cycling (e.g. age, luggage), a bicycle is available and cycling is a reasonable alternative<sup>3</sup>.

**Figure 10** details the reasons given by residents for not choosing cycling for specific individual trips.

For 44 % of these potential bicycle trips, the main reason given for not cycling was the perceived amount of time it would take,

and for 4 % of the trips, the main reason given was the perceived lack of adequate bicycle infrastructure.

In case of 5 % of the trips, lack of comfort (car emissions, safety risk, clothing) was an important reason for not cycling and for 8 % of the trips, there was a generally negative view of cycling as a mode for everyday trips (that is, a negative community climate).

The remaining 39 % of these potential cycling trips are 'free of choice', so they would be the first target to be convinced to change mode choice by soft measures (motivation, awareness-raising etc.).

## 10. Conclusion

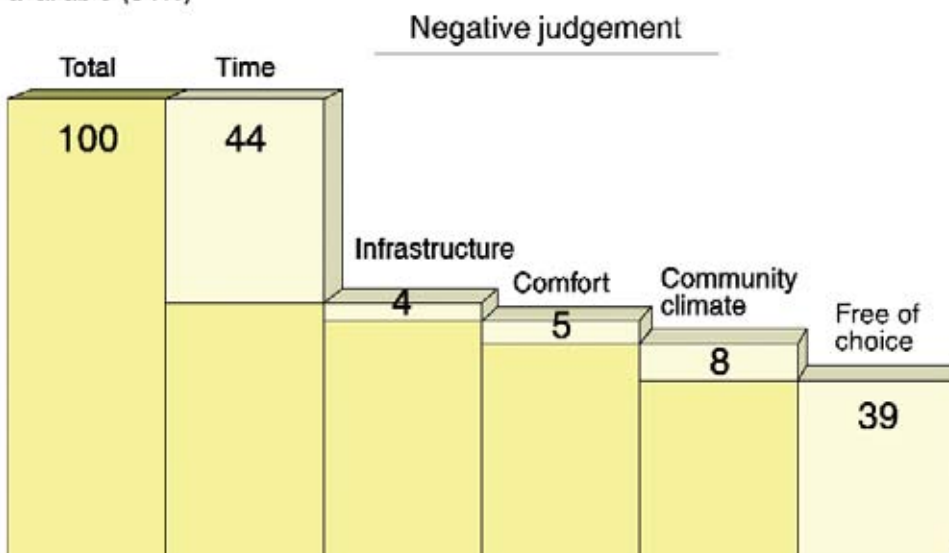
The travel behaviour research demonstrates that; by focusing on soft measures (i.e. information, motivation etc) Darlington's Town on Move programme has the potential to unlock a significant shift towards use of sustainable travel modes and to reduce car driver trips, in particular for short journeys in the urban area.

Figure 10

### Potential for the Bicycle

Darlington; trips within Darlington

Car trips with no constraints, bicycle available (34%)



<sup>3</sup> The distance assumed to be reasonable to cycle is 6 km.

