

# Worcester: Sustainable Travel Demonstration Town

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Evaluation of *Choose How You Move* (2004-08)

Headline results

February 2009



## 1 INTRODUCTION

This report has been prepared for Worcestershire County Council by Sustrans and Socialdata to present headline results of the evaluation of Worcester's Sustainable Travel Demonstration Town (STDT) programme, *Choose How You Move*.

The tables provided in this report give a representative picture of the day-to-day travel patterns of residents of the Worcester urban area (excluding commercial and freight traffic, and trips over 100 km). From a survey conducted in late 2008 (at the end of the STDT period), data are presented for a number of key mobility indicators, and compared with the findings of a baseline survey conducted at the same time of year in 2004.

These headline data relate to behaviour across the whole population in 2004 and 2008, and so take no account of any background trends or influences (eg due to fluctuations in fuel prices) over the same period. Furthermore, at this stage, the observed changes may not be attributed directly to any specific *Choose How You Move* intervention.

The results presented in this report are preliminary. Analysis of the final travel behaviour survey data is ongoing. Definitive final results on overall behaviour change, together with an evaluation of the *Choose How You Move* Individualised Travel Marketing programme, will be presented in a more detailed report at the end of March 2009. This report will also provide a detailed description of the survey methodology, sampling frame, response rates, etc.

Section 2 of this headline report provides an overview of the survey design and response rate. Section 3 provides a glossary of terminology used in the report. Section 4 presents data tables showing key travel behaviour indicators for 2004 and 2008. Section 5 provides commentary on the data tables.

## 2 SURVEY DESIGN

**OBJECTIVES:**

- o Information about factual personal travel behaviour of the city's population
- o Analysis of data and reporting results
- o Evaluation of the outcomes of Worcester's Sustainable Travel Demonstration Town programme

**METHODS:**

- o Postal self-administered household survey with telephone support (New KONTIV design, travel diary)
  - o Collection of complete activity patterns for each person for one sampling day
  - o Random sample of the residential population of the Worcester urban area (including people 0 years of age and older)
  - o Number of respondents: 4,072 people (net)
  - o Response rate: 63%
  - o Sampling days: Monday to Sunday
- Time of survey: September – December 2008  
The results are cleared of the 'Non-Response-Effect' and 'Non-Reported-Trips'
- o Database:  
All persons, trips up to 100.0 km
  - o Commercial trips are excluded

**COMMISSIONER:**

Worcestershire County Council

### 3 GLOSSARY

#### General terminology

<b>Trip</b>	Movement generated by an out-of-home activity plus trips back home. More than one mode can be used for one trip.
<b>Journey</b>	A sequence of trips starting and ending at home, to do one or more activities.
<b>Activity</b>	Main business carried out in one spatial setting away from the home.
<b>Persons</b>	All members of the surveyed households.
<b>Mobile persons</b>	Persons undertaking at least one trip during the sampling day.
<b>Mode</b>	The means of transport used for one trip; for one trip generally more than one mode can be used. If more than one mode is used for one trip, a main mode (of the trip) is determined according to the following ranking: public transport; motorised private modes (car, motorbike); non-motorised modes (bicycle, walking).
<b>(Trip) distance</b>	Door-to-door distance of a trip (as reported by the respondent). The analysis of day-to-day mobility excludes trips of more than 100 km (around 2% of all trips) to avoid skewing any distance-related indicators.
<b>(Trip) duration</b>	Duration between the start of a trip and arrival at the destination (based on the time starting a trip and arriving at the destination, both reported by the respondent).
<b>Commercial (trip)</b>	Trips undertaken exclusively as professional services (eg as a taxi driver, freight driver, etc) are not included in the results presented here.

#### Activity terminology

<b>Work</b>	Commuting including trips to usual place of work from home, or from work to home. Also trips to work from a place other than home or in the course of work (eg coming back to work from going to the shops during a lunch break).
<b>Work-related business</b>	Personal trips in the course of work.

<b>Education</b>	Trips to school including nursery school and further / higher education by full-time students, students on day-release and part-time students following vocational courses.
<b>Escort</b>	When the traveller has no purpose of his or her own other than to escort or accompany another person (eg taking a child to school).
<b>Shopping</b>	All trips to shops or from shops to home, even if there was no intention to buy.
<b>Personal business</b>	Visits to services (eg hairdressers, launderettes, betting shops, solicitors, banks, estate agents, libraries, etc) or for medical consultations or treatment.
<b>Leisure</b>	Visits to meet friends, relatives, or acquaintances, both at someone's home or at a pub, restaurant, etc. Religious activities, all types of entertainment or sport, clubs, and non-vocational evening classes, political meetings, recreation, leisure walks, day trips, holidays (within the UK) etc.

#### 4 DATA TABLES

TABLE 1

MODE CHOICE

<b>2004</b>		<b>2008</b>
<b>%</b>		<b>%</b>
<b>25</b>	<b>Walking</b>	<b>28</b>
<b>3</b>	<b>Bicycle</b>	<b>3</b>
<b>0</b>	<b>Motorcycle</b>	<b>0</b>
<b>45</b>	<b>Car as driver</b>	<b>42</b>
<b>21</b>	<b>Car as passenger</b>	<b>20</b>
<b>6</b>	<b>Public transport</b>	<b>7</b>
<b>100</b>	<b>TOTAL</b>	<b>100</b>

Database:                    2004: 4,125 persons, 12,037 trips (up to 100 km)  
                                   2008: 4,072 persons, 11,620 trips (up to 100 km)

TABLE 2

MODE CHOICE  
 – trips per person per year –

<i>Trips per person per year</i>	<b>2004</b>	<b>2008</b>	<b>Relative change</b>
<b>Walking</b>	<b>255</b>	<b>284</b>	<b>+ 11 %</b>
<b>Bicycle</b>	<b>27</b>	<b>32</b>	<b>+ 19 %</b>
<b>Motorcycle</b>	<b>4</b>	<b>3</b>	<b>n/a<sup>a</sup></b>
<b>Car as driver</b>	<b>459</b>	<b>426</b>	<b>- 7 %</b>
<b>Car as passenger</b>	<b>221</b>	<b>212</b>	<b>- 4 %</b>
<b>Bus</b>	<b>46</b>	<b>55</b>	<b>+ 20 %</b>
<b>Other public transport</b>	<b>13</b>	<b>11</b>	<b>- 15 %</b>
<b>TOTAL</b>	<b>1025</b>	<b>1023</b>	

Database:	2004: 4,125 persons, 12,037 trips (up to 100 km)
	2008: 4,072 persons, 11,620 trips (up to 100 km)

NOTE: <sup>a</sup>Number of trips per person per year is too low to report meaningful relative change.

TABLE 3

**BASIC TRAVEL CHARACTERISTICS**  
– per day –

<b>2004</b>	<i>Per person per day</i>	<b>2008</b>
<b>1.7</b>	<b>Activities</b>	<b>1.7</b>
<b>60</b>	<b>Travel time (minutes)</b>	<b>59</b>
<b>3.0</b>	<b>Trips</b>	<b>3.0</b>
<b>23</b>	<b>Distance (km)</b>	<b>23<sup>a</sup></b>

Database:                    2004: 4,125 persons, 12,037 trips (up to 100 km)  
                                      2008: 4,072 persons, 11,620 trips (up to 100 km)

NOTE: <sup>a</sup> This excludes trips over 100 km, as explained in the Introduction in Section 1.

TABLE 4

TRIP PURPOSE

<b>2004</b>		<b>2008</b>
<b>%</b>		<b>%</b>
<b>22</b>	<b>Work</b>	<b>22</b>
<b>3</b>	<b>Work-related business</b>	<b>3</b>
<b>10</b>	<b>Education</b>	<b>10</b>
<b>22</b>	<b>Shopping</b>	<b>20</b>
<b>3</b>	<b>Personal business</b>	<b>4</b>
<b>12</b>	<b>Escort</b>	<b>12</b>
<b>28</b>	<b>Leisure</b>	<b>29</b>
<b>100</b>	<b>TOTAL</b>	<b>100</b>

Database:                   2004: 4,125 persons, 12,037 trips (up to 100 km)  
                                   2008: 4,072 persons, 11,620 trips (up to 100 km)

TABLE 5

CAR USAGE

<b>2004</b>	Per (private) car per day	<b>2008</b>
<b>74</b>	<b>Usage</b>	<b>71</b>
<b>2.4</b>	<b>Trips</b>	<b>2.2</b>
<b>44</b>	<b>Duration (min)</b>	<b>41</b>
<b>25.3</b>	<b>Distance (km)</b>	<b>23.0</b>
<b>1.5</b>	<b>Occupancy</b>	<b>1.5</b>

Database: 2004: 4,125 persons, 12,037 trips (up to 100 km)  
 2008: 4,072 persons, 11,620 trips (up to 100 km)

TABLE 6

CAR MILEAGE

2004		2008
49,500	(Private) cars in total	52,000
25.3	km per car per day (everyday mobility)	23.0
	Relative reduction	-9%

427.1 m	Total km per year (everyday mobility)	407.8 m
	Reduction (km per year)	- 19.3 m

Database: 2004: 4,125 persons, 12,037 trips (up to 100 km)  
 2008: 4,072 persons, 11,620 trips (up to 100 km)

## 5 COMMENTARY

TABLE 1: MODE CHOICE

While basic mobility figures have remained fairly constant (see Table 3), there were significant changes in mode choice between 2004 and 2008.

On an average day in 2004 (including weekend days), 25% of trips made by Worcester residents were made on foot (i.e. a genuine walking trip). This increased to 28% in 2008. The share of trips made by bicycle remained stable at 3%. Therefore the overall share for non-motorised modes rose from 28% to 31%.

Motorised private modes accounted for around two thirds of all trips in 2004; the majority of these trips by car as driver (45%). Travel by car as passenger accounted for just over a fifth of all trips (21%), and less than 0.5% of all trips were made by motorbike. In 2008 the overall share of trips made by private motorised modes (as the main mode) had fallen to 62%: 42% car as driver; 20% car as passenger; and still less than 0.5% by motorbike.

Public transport was used for 7% of all trips in 2008, up from 6% in 2004.

TABLE 2: MODE CHOICE (trips per person per year)

The figures in Table 1 are rounded percentages (for all trips by Worcester residents) and do not allow a precise calculation of changes since 2004.

However, Table 2 shows mode choice in terms of trips per person per year. Here we see that Worcester residents made, on average, 1025 trips over the course of 2004 and 1023 trips in 2008. However, although the number of trips per person remained almost constant, the modes used had changed. Walking trips increased by 11% and cycling trips by 19%.

Public transport shows an increase in bus use of +20%, and a decrease of -15% in other public transport modes.

Correspondent with the increases in walking, cycling and bus trips, there was a decrease in the use of cars (-7% for car as driver and -4% for car as passenger).

Some of the baseline numbers (e.g. for cycling) are relatively low and in these cases figures for percentage change should be interpreted with caution (this will be discussed further in the final report).

#### TABLE 3: BASIC TRAVEL CHARACTERISTICS (per day)

On an average day in 2008 (including weekend days) Worcester residents performed 1.7 out-of-out-home activities. They needed 3.0 trips to do this. Their total travel time was just under an hour (59 minutes) and the distance travelled per day (excluding trips over 100 km) was 23 km.

These figures remain largely unchanged since 2004.

#### TABLE 4: TRIP PURPOSE

Everyday activities of the Worcester population in 2004 could be divided into three major groups of similar size: predetermined trips (work, work-related business, education = 35 %); trips of a more discretionary nature (shopping, personal business, escort = 37 %); and leisure trips (28 %).

In 2008 these patterns remained almost identical (predetermined = 35 %; discretionary = 36 %; and leisure = 29 %).

#### TABLE 5: CAR USAGE

In 2004, nearly three in every four (privately registered) cars in Worcester were used on an average day. Each registered car made an average of 2.4 trips per day with a daily travel time of 44 minutes and a daily travel distance (excluding trips over 100 km) of just over 25 km.

By 2008, figures for all of these indicators had decreased. A smaller proportion of cars were used on an average day (71%); cars made fewer trips per day (2.2); and travel time and distance (again, excluding trips over 100 km) had also reduced (to 41 minutes and 23 km, respectively).

Only car occupancy remained unchanged (1.5 persons per trip).

#### TABLE 6: CAR MILEAGE

The number of registered (private) cars in the Worcester survey area increased from 49,500 in 2004 to 52,000 in 2008.

At the same time, distance travelled per car per day (excluding trips over 100 km) fell by 2.3 km to 23 km (a relative reduction of -9%). Calculated for a whole year (allowing for 24 days where people are not at home), this results in a total distance travelled by car across Worcester of 427.1 million kilometres in 2004 and 407.8 million kilometres in 2008 (for trips under 100 km), representing a total saving of 19.3 million car kilometres per year.