



TRAFFIC ADVISORY LEAFLET

6/00

Monitoring Walking



INTRODUCTION

Local highway authorities in England and Wales are expected to include a local walking strategy within their local transport plans. As part of the process they should set targets for encouraging walking. Progress towards these targets will need to be monitored.

Local authorities in Scotland may produce local transport strategies. Guidance on the production of strategies emphasises the importance of walking as a mode of travel both in its own right and in the integration of all other modes. It recommends the setting, where appropriate, of local targets.

This leaflet summarises the results of a study for the Department of the Environment, Transport and the Regions (DETR) by the Transport Research Laboratory (TRL), which reviewed techniques currently available to monitor walking activity. Wider information is contained in "Guidelines for Providing for Journeys on Foot" published by the Institution of Highways & Transportation.

PLANNING A MONITORING PROGRAMME

Methods for monitoring walking (counts, interviews, etc) exist and need not be complicated. However, establishing a monitoring programme that will provide meaningful data on a regular basis requires careful planning. It is important to define the aspects of pedestrian activity that are most relevant. A local authority concerned with the vitality of its central retail area will be more interested in tracking the flow of pedestrians in the High Street. A school that introduces a travel plan will want to know the modal split, including walk, for its pupils.

June 2000

Traffic Advisory Unit

Basic method	Techniques	Survey Location
Interviews/questionnaires	Origin/destination interview	Destination Cordon/screenline Principal routes Random points
	Household survey	Home
	Travel diary	Home/school/workplace
Counts (flow or density)	Manual Semi-automatic Fully automatic	Destination Cordon/screenline Principal routes Random points

SURVEY METHODS

ORIGIN/DESTINATION INTERVIEWS

Origin/destination interviews are particularly appropriate for monitoring walking activity and mode share. They can provide information about the distance travelled and the modes used for each journey stage.

HOUSEHOLD SURVEYS AND TRAVEL DIARIES

Household surveys, which may include some form of travel diary, can be useful for obtaining general information about walking (and other modes). Where questions about walking are included in household surveys, they should be kept simple and concentrate on common, easily-defined journeys, particularly education and work journeys.

MANUAL COUNTS

Manual counts are the traditional method for counting pedestrians. Other information can also be recorded, such as gender, approximate age, walking impairment and luggage. The cost of the survey is related directly to survey staff time. If data is required for one day only, manual counts are relatively inexpensive.

AUTOMATIC COUNT METHODS

The use of automatic methods for monitoring pedestrian activity is currently very limited amongst local authorities. There are, however, several technologies in use, particularly for commercial purposes.

- **Video imaging**
Walking activity can be captured by video camera and the data (eg pedestrian flows) obtained automatically by a microprocessor and appropriate software. This may be cost effective where prolonged monitoring is required.

- **Infra-red sensors**
Infra-red sensors can be used to count pedestrians. The equipment is generally cheaper than video imaging but it is less flexible. It usually requires a bottleneck so that people are walking in single file when breaking the infra-red beam, otherwise the beam may not re-form before the next person walks through. As a result, this approach is unsuitable in town centres or on busy streets.
- **Piezoelectric pressure mats**
Piezoelectric pressure mats have been used to count pedestrians and cyclists on some off-road paths.

SURVEY SITES

CHOOSING SUITABLE SITES

Because walk trips are short, and levels of walking can vary considerably from one street to another in the same town, the choice of survey site is important. The count sites should be in areas of high walking activity, such as the approaches to town centres, stations and points where residential feeder roads join the main highway network.
Counts from sites with high levels of walking activity tend to offer consistent results, which can be readily compared to counts in other places and at other times. However, if sites have very high pedestrian flows, it may be difficult for enumerators to cope. In that event other methods (such as video) may be required, or alternative sites selected.

DESTINATION SURVEYS

Surveys at key destinations such as schools, offices and factories can provide valuable data on walking and may allow long term monitoring to be undertaken. This can be compared to a baseline at these

destinations. Those organisations with an interest in travel plans may be willing to undertake such surveys. With the addition of surveys at control destinations, it is possible to measure the changes due to travel plans, not only against a particular organisation’s baseline, but also against the control.

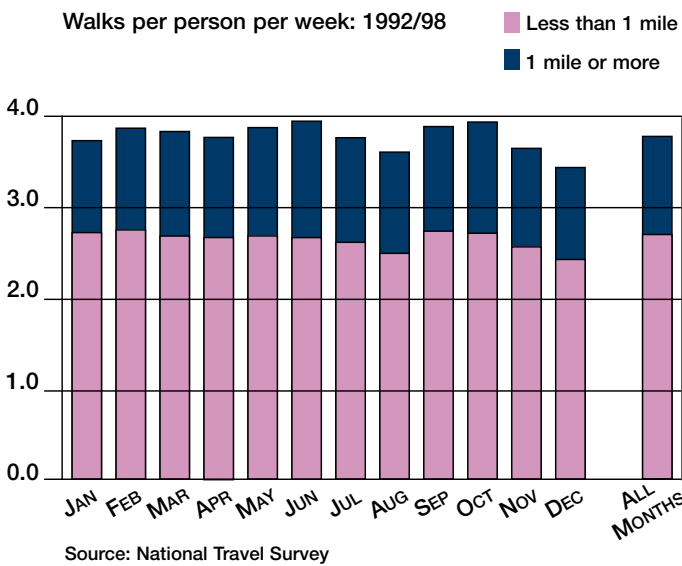
CORDONS AND SCREENLINES

A number of local authorities undertake cordon or screenline traffic counts on a regular basis. If these are manual counts, it may be useful to include pedestrians. That would also enable a better estimate of modal split to be determined. Existing cordons or screenlines may need to be modified to be suitable for monitoring walk trips. Screenlines are generally more suitable for walk trips, as they can cover both radial and orbital trips. The aggregate count across a cordon or screenline is more reliable than the individual counts.

WHEN TO UNDERTAKE SURVEYS

The ideal time for monitoring walking activity is when flows are highest. That is usually in June, and is linked to good weather and longer hours of daylight. However, because most walk journeys are for utility reasons, the number of walk journeys per month does not vary greatly - unlike cycling. School holidays influence walking patterns and the purpose of a trip is often time dependent.

It is uncertain to what extent the weather influences the amount of walking activity overall. It is likely that leisure walking is more strongly affected by weather conditions than walking for utility purposes.



GENERAL PRINCIPLES

- Use national or regional sources of data wherever possible. Principle sources are the National Travel Survey, the Population Census and the Labour Force Survey.
- When local surveys are undertaken, methods and definitions should if at all possible be consistent with national surveys. This will allow comparisons to be made.
- Accurately monitoring the overall level of pedestrian activity at the local level can be difficult and expensive. It will usually be better to undertake selective monitoring of key destinations and journeys, particularly those involved in schemes to promote walking such as safer routes to schools.
- Origin/destination surveys, in town centres, rail stations, workplaces, schools, hospitals or shops, may be the most cost-effective and useful monitoring method. Schools, employers, etc could be requested to undertake simple surveys and to report the results back to the local authority. This latter approach will work best where the third party concerned is involved in some form of travel plan initiative.
- Establish a limited number of surveys and indicators that can be repeated reliably at least annually. Large surveys can provide useful snapshots, but may prove too expensive to repeat regularly.
- Because pedestrian journeys are usually very short, the choice of any screenline or cordon is more critical than it would be for surveys of motor vehicles. The cordons used to monitor vehicles may be inappropriate for surveying pedestrians.
- Pedestrian flows at any one location are likely to show more variety from day to day than flows of motor vehicles. One-day counts may provide a useful impression, but are unlikely to form a statistically reliable basis for regular monitoring.
- Manual counts are fairly simple to undertake. They can record additional details such as gender, adult/child, and where people are encumbered or have obvious difficulties with walking.
- Some automatic counting equipment is available, including video cameras, infra-red and piezoelectric sensors.
- Daily pedestrian flows are affected by the weather. The size of the effect appears to be greater than that for motor vehicles but less than that for cyclists.

TECHNICAL ENQUIRIES

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REFERENCES

Monitoring Walking Activity (TRL, 1999)
(only available at www.trl.co.uk/environment/monitoring_walking.pdf)

Guidelines for Providing for Journeys on Foot
(The Institution of Highways & Transportation, 2000)

Encouraging walking: advice to local authorities
(DETR, 2000)

Guidance on Full Local Transport Plans
(DETR, 2000)

Traffic Advisory leaflet 2/00, Framework for a local walking strategy (DETR, 2000)

Traffic Advisory leaflet 3/00, Walking Bibliography
(DETR, 2000)

Guidance on Local Transport Plans in Wales
(National Assembly for Wales, 1999)

Guidance on Local Transport Strategies and Road Traffic Reduction Reports (Scottish Executive, 2000)
(available at www.scotland.gov.uk)

Safer Routes to School (Guidance from Scottish Executive, 1999) (available at www.scotland.gov.uk)

Walking in Great Britain (DETR, 1998)

National Travel Survey 1999 Update (DETR, 1999)

Transport Trends (DETR, 1999)

Monitoring personal travel for Local Transport Plans (DETR, 1999)
(available at www.clip.gov.uk/groups/transport/sub_transport.htm)

Walking in Great Britain Personal Travel Factsheet 4 (DETR, 1999) (available at www.transtat.detr.gov.uk/facts/nts/pt4_99/walk99.htm)

DETR WEBSITE WWW.DETR.GOV.UK/

Details of Traffic Advisory leaflets available on the DETR website can be accessed as follows:

From the DETR homepage, click on the Local Transport icon and then on Traffic Advisory Leaflets. Lastly, click on one of the themes to view material.

The Department of the Environment, Transport and the Regions sponsors a wide range of research into traffic management issues. The results published in Traffic Advisory Leaflets are applicable to England, Wales and Scotland. Attention is drawn to variations in statutory provisions or administrative practices between the countries.

The Traffic Advisory Unit (TAU) is a multi-disciplinary group working within the Department of the Environment, Transport and the Regions. The TAU seeks to promote the most effective traffic management and parking techniques for the benefit, safety and convenience of all road users.

The Department of the Environment,
Transport and the Regions

Scottish Executive

Cynulliad Cenedlaethol Cymru
The National Assembly for Wales

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Within Wales, enquiries should be made to:
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