

Making Personal Travel Planning Work: Research Report

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Executive summary

Personal Travel Planning (PTP) is an approach to delivering targeted information directly to travellers, to help them make sustainable travel choices. It seeks to overcome habitual use of the car, enabling more journeys to be made on foot, bike, bus, train or in shared cars. It can also seek to discourage unnecessary travel, through the provision of local or site-specific information.

PTP can be applied in a number of contexts, for example schools, workplaces and residential communities. This report considers residential-based PTP. It contains evidence collated from an initial review of the literature accompanied by 12 in-depth case studies, 10 smaller vignette case studies and contributions from a panel of 17 experts in the field of PTP and smarter choices measures. The case study sites provide extensive evidence, collectively accounting for PTP programmes that have targeted 229,000 households.

The report is structured around the six objectives established by the Department for Transport for the project, with a synopsis of the findings summarised below. A seventh objective was to produce a best practice guide for local authority practitioners on the effective implementation of large-scale personal travel planning (built around case studies). This is due to be published in early 2008.

Objective 1: Describe the key elements for running a successful project and achieving measurable benefits.

Within the UK, PTP has been reported to reduce car driver trips by 11% (amongst the targeted population) and reduce the distance travelled by car by 12%. In terms of mode share, this represents a decrease in car driver trips of 4 percentage points, with walking the main beneficiary, having, on average, a reported increase of 3 percentage points. Follow-on benefits from these impacts can be expected in terms of wider community benefits, including the improved health of participants, a greater propensity to use local services, and improved local air quality.

Whilst evidence suggests that PTP can be applied to any community (reductions in car use are generally consistent across all project areas), practitioners generally agree that the greatest success is likely to be delivered where PTP is based in an area of discrete, self-contained communities with appropriate local facilities, good community networks and locally recognised problems of traffic congestion. The area should ideally have good levels of accessibility (by all sustainable transport modes), combined with excess capacity on the public transport system. A stable (non-transient) population, together with a wider sustainable transport investment programme, will further enhance the capability of the programme to achieve success.

The effectiveness of PTP is enhanced where the project is led by a strong advocate with commitment and enthusiasm for PTP. This, accompanied by effective project management and staff who are committed and motivated to achieve the objectives of the PTP project, further improves performance. Increasing the scale of the project has a positive impact upon its cost-effectiveness.

Objective 2: Describe the key risks and barriers to running a successful project, and how these have been avoided and/or overcome.

As PTP is a relatively new transport strategy tool, there are a number of barriers to its effective, successful implementation and development. The most important are:

Attitudinal barriers – most notably general scepticism over the validity of the claims of success, and a lack of understanding/acceptance of projects from political and media interests, as well as the general public.

Localised barriers – including high traffic speeds, a poor public transport offer, and an ‘unfriendly’ street scene, which restricts a possible shift to sustainable modes.

Organisational barriers – such as the availability of (revenue) funding, a lack of organisational capacity to deliver programmes and a lack of business planning and project management skills within the transport planning sector.

Assessment barriers – pertaining to the ability to demonstrate the performance of the projects, including difficulties associated with transparent data analysis and the overall evaluation methodology.

Evidence from large-scale UK projects has demonstrated how all of these barriers can be reduced through rigorous planning, political and media engagement, creative funding models, robust (yet appropriate) evaluation tools and supporting investment in sustainable transport networks.

Objective 3: Describe the experience that exists in making a successful business case.

There is a limited (but growing) body of evidence on the cost-effectiveness of PTP, which draws upon experience both in the UK and more extensively overseas. Effective cost-benefit analysis takes account of a broad range of impacts (across different sectors), and typically reports positive cost-benefit figures in the order of 1:30 over a 10-year period.

The cost-effectiveness of PTP is improved as the scale of implementation is increased. Large-scale UK PTP projects have demonstrated a value for money estimate (in the first year) of between £0.02 and £0.13 per vehicle kilometre saved. PTP typically costs between £20 and £38 per household targeted.

Objective 4: Identify how local authorities have funded campaigns, beyond central Government or European grant.

There has been a strong emphasis on central Government or European grant funding for PTP projects to date. However, it is generally accepted that, although this has been beneficial to PTP in the short term (enabling the case for PTP to be established), there is now a need to identify more sustainable long-term funding sources to develop the implementation of PTP in the future.

There is some limited experience of securing annual PTP budgets from LTP and internal funds. PTP project partners (for example, bus operators) have typically contributed through staff time and project resources (rather than financial contributions).

There is scope for more innovative future funding mechanisms, as the evidence base grows and project evaluation results lead to greater confidence being placed upon the predicted outcomes of planned projects. This could include regional funding opportunities, contributions from related sectors, developer contributions and sponsorship of promotional materials and information.

Objective 5: Define the key aspects for monitoring and reporting results. State whether the common framework for evaluating PTP projects developed by DfT's Operational Research Unit has been used, whether it works or has been improved.

The benefits from PTP projects arise from changes in travel behaviour and contingent impacts, therefore a key part of the evaluation of PTP projects is a systematic investigation of travel behaviour changes and resultant effects. Robust monitoring and evaluation techniques are therefore essential to substantiate claims of PTP effectiveness. Evaluation serves both the purpose of assessing value for money and adaptive learning about PTP design.

Before reviewing the case studies in this project it was apparent that there are mixed signals and opinions on the future need for evaluation of PTP. Results from a large number of studies are consistent in showing reductions in car use and increases in the use of alternative modes of transport, but some doubts have been raised that the scale of impacts reported may be exaggerated, and it is suggested that improved evaluation procedures are used to examine this.

The methods selected for evaluation should seek to ensure that, as far as possible, measured outcomes are valid and reliable. Validity refers to measuring what is intended, outcomes being attributable to intervention (and not external factors) and outcomes being generalisable to other situations. Reliability refers to repeatability of measured outcomes and is largely related to survey sample sizes used.

Consistency in the evaluations conducted for different PTP projects enables results to be compared and synthesised. For large-scale projects, the approach prescribed by the DfT ORU has been largely applied.

While the evaluation results show consistent results, there are some gaps in understanding and reporting that are identified (process of behavioural change experienced by individuals, disaggregation of results for different participant types, sampling errors/confidence intervals, corroborating data for aggregate travel). It is recommended that independent in-depth evaluations are conducted for a limited number of projects to further the understanding of the effectiveness of different PTP approaches and their durability. This will enable future evaluations to adopt a more pragmatic, limited 'light touch' evaluation.

Objective 6: Set out the evidence on the sustainability of results from previous campaigns.

There is only limited evidence with which to assess the long-term sustainability of previous campaigns due to the 'young' age of many UK PTP projects. Additionally, sustained monitoring of PTP projects is very expensive, and hence has not been a prominent feature of projects delivered to date. In practical terms, it is often difficult to contact the original participants in the intervention, and monitoring using corroborative data is unreliable if major infrastructure or transport improvements have taken place in the period since the intervention. As such it is not possible to fully ascertain the long-term impacts of PTP interventions.

The limited evidence that does exist suggests that travel behaviour is sustained in the immediate years following the intervention (up to five years afterwards), although further work is required to fully validate these findings.



The Sutton travel advisors. Photo courtesy Smarter Travel Sutton

1 Introduction

- 1.1 Integrated Transport Planning Ltd, in partnership with Richard Armitage Transport Consultancy Ltd., Cleary Stevens Consulting and the University of the West of England (UWE), Bristol, has been commissioned by the Department for Transport (DfT) to undertake a 'Review of the effectiveness of Personal Travel Planning'.
- 1.2 Personal Travel Planning (PTP)¹ is defined as a:
a targeted marketing technique providing travel advice based upon personal trip patterns that seeks to induce voluntary travel behaviour changes in favour of more sustainable modes of transport.
- 1.3 Whilst PTP techniques can be applied in many contexts, this study, in accordance with the DfT brief, has focused solely on residential-based PTP schemes.
- 1.4 PTP provides a relatively new approach to delivering targeted information directly to travellers, to help them make longer-term, sustainable travel choices. It seeks to overcome psychological barriers to sustainable transport, enabling more journeys to be made on foot, bike, bus, train or in shared cars. It is unlike typical transport measures, drawing upon the 'principles of persuasion' and 'social marketing' to engage in one-to-one dialogue with project participants. It has been deployed in many different locations, on different scales, both in the UK and more extensively overseas.
- 1.5 This final study report summarises the findings of the six-month study. It examines best practice in PTP, explores in detail different approaches and scales of operation, and critically appraises (within the boundaries of the study objectives) the successes and failures to date (primarily focused upon reported findings within the UK, but drawing upon overseas experience where appropriate).
- 1.6 In addition to this final report, the outcome of the study is supported by case study summaries, and a best practice guide (due to be published in 2008) aimed at local authority practitioners seeking to deliver future PTP programmes. This best practice guide (Objective 7) seeks to shed light on the key aspects of delivering successful PTP projects, drawing upon successful case study examples to demonstrate how local authorities can deliver projects with tangible benefits. It presents a generic process, independent of any one particular commercial consultancy approach, enabling local authorities to be better informed when commissioning their PTP partner(s), or indeed taking a more active role in delivering their own projects in house.

¹ PTP has also commonly been known as Personalised Travel Planning, Individualised Travel Marketing and Personalised Journey Planning.

2 Study objectives

2.1 The specific objectives of the study were defined in the DfT brief, and for clarity, are as follows:

Objective 1: Identify the key elements for running a successful project and achieving measurable and cost-effective benefits in terms of car mileage reductions, carbon emissions and other policy objectives. This should consider both the procuring of services to run the campaign, and training to run campaigns in house.

Objective 2: Identify the key risks and barriers to running a successful project and achieving measurable and cost-effective benefits, and how these have been avoided and/or overcome.

Objective 3: Successful practice in making a business case.

Objective 4: Identify how local authorities have funded campaigns, beyond central Government or European grant (e.g. the authorities' own revenue budgets, Local Area Agreements, developer contributions).

Objective 5: Identify the key aspects for monitoring and reporting results, including whether the common framework for monitoring and evaluating future personal travel planning projects developed by DfT's Operational Research Unit was used, whether it works or has it been improved.

Objective 6: Identify and assess evidence on the sustainability of results from previous campaigns.

Objective 7: Draft good practice guidelines for local authority practitioners on the effective implementation of large-scale personal travel planning, built around case studies.

Project steering group

2.2 Whilst the study was led by officers from the DfT, the client team comprised a wider steering group, consisting of:

- Jacqui Wilkinson, Martin Ellis, Daniel Barrett, Tracey Budd, Jeremy Ketley (DfT);
- James Ryle, Neil Smith (Sustrans);
- Lisa Buchanan (Steer Davies Gleave);
- Emilie Van De Graaff (Worcestershire County Council);
- Sinead Flavin (Transport for London).

2.3 Members of the steering group also partook in the expert panel discussion (see Chapter 3).

Project study team

2.4 The project team comprised a number of practitioners and academics with experience in developing, delivering and evaluating 'smarter choices' measures. The named individuals are:

- Jon Parker, Integrated Transport Planning Ltd (Project Manager);
- Lynsey Harris, Integrated Transport Planning Ltd;
- Rebecca Laws, Integrated Transport Planning Ltd;
- Richard Armitage, Richard Armitage Transport Consultancy;
- Kath Tierney, Richard Armitage Transport Consultancy;
- Jo Cleary, Cleary Stevens Consulting;
- Dr. Kiron Chatterjee, University of the West of England, Bristol;
- Professor Phil Goodwin, University of the West of England, Bristol.

3 Study methodology

3.1 The study is divided into the following distinct phases:

Stage 1: Literature review

3.2 The Literature Review was undertaken during a four-week period, commencing January 2007, and an internal project report was submitted to the Department for Transport and the study steering group in February 2007. The aim of the literature review was to identify potential case study sites for further detailed investigation and case study interview.

Stage 2: Selection of case studies

3.3 Based upon the schemes identified in stage 1, and the response to a press release inviting case study leaders to nominate themselves (issued to the transport and planning journals and the Local Transport Planning Network of local government officers), the case studies were selected in consultation with the Department for Transport, with consideration of the following factors:

- geographic coverage;
- variety of approach to PTP;
- scale of scheme;
- scheme maturity;
- scheme performance.

3.4 The sites identified for full case study interview were:

- Lancashire
- Brighton
- London (Kingston, Sutton, Haringey)
- Bristol
- Worcester
- Darlington
- Peterborough
- Nottingham (two separate projects)
- Brisbane (Australia)
- Perth (Australia)
- Melbourne (Australia)

3.5 In addition to the sites identified for full, detailed case-study interviews, a number of sites of interest were identified which were either of smaller scale, or adopted a less intensive approach to PTP, and were considered worthy of telephone discussion or short half-day site visits. These sites were:

- Doncaster
- Queen Elizabeth Park, Surrey
- Gloucester
- Merseyside
- Wolverhampton
- Halifax
- Hereford
- Weston-super-Mare

Stage 3: Expert panel

3.6 Within the emerging 'smarter choices' arena, there are a number of practitioners with broad cross-cutting experience, with whom it was felt an active dialogue would assist the study. As such, an expert panel was convened by the project team to provide external support to the study. This support was forthcoming in two ways: first, through attendance at a one-day brainstorming workshop midway through the study; and, second, through the provision of comments on the draft final report. The members of the expert panel were:

- Amy Wardell (Peterborough Sustainable Travel Town);
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- Howerd Booth (Lancashire County Council);
- Professor Peter Bonsall (Leeds University);
- Rose McArthur (Colin Buchanan);
- Werner Brög (Socialdata);
- Lynn Sloman (TfQoL);
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- Geoff Gardner (North Yorkshire County Council);
- Professor Stephen Potter (Open University);
- Lynda Addison (Addison and Associates);
- Professor John Whitelegg (York University);
- Bruce James (Queensland Transport);

- Satoshi Fujii (Tokyo Institute of Technology);
- Syd Jerram (Noosa Council).

Stage 4: Case study and practitioner Interviews

3.7 Interviews were held with scheme promoters (and, where appropriate, project partners, including consultants and public transport operators). A standard interview pro forma was adopted across all sites to collate basic and consistent data, supplemented by open discussion to explore local issues arising. The case studies are reported in a separate technical note and have been audited by the sites themselves prior to publication.

Stage 5: Reporting and best practice guidelines

3.8 The final stage of the study involved the preparation of the final research report, a summary report, case study summaries and a best practice guide. The best practice guide draws directly upon the findings of the study (due to be published in early 2008).

4 Background

- 4.1 PTP is a targeted marketing technique, involving raising the awareness of travel decisions and provision of information, advice, motivation and incentives. PTP operates at the level of individuals or households in order to facilitate the making of journeys using more sustainable modes and/or to reduce the number, frequency or length of journeys made. PTP forms an important part of UK national and local transport policy, contributing to the suite of tools promoted under the general heading of ‘smarter choices’.



PTP information handover, Worcester. Photo courtesy J Bewley/Sustrans

- 4.2 The concept of PTP has been deployed overseas (particularly in Australia and Germany) since the 1980s and was first introduced in the UK in the late 1990s. Since then there have been a number of pilot studies and projects of varying scales which have targeted households, schools and employees. These studies generally take the form of individual consultations (either personally or via telephone), followed by the provision of tailored information on the range of travel options available for trips and journeys that each individual undertakes. Information is provided on a range of different travel options, and can typically include:
- public transport timetable and fare information (for the local stops and services);
 - personalised journey plan for a trip made on a regular basis;
 - map of local walking and cycling routes;
 - a free limited period trial on public transport;
 - a free consultation for further travel advice.
- 4.3 There are many different approaches to the delivery of PTP, each with varying degrees of scale, timescales, engagement, personalisation, dialogue and cost. Each of the different approaches to PTP can also be applied over different time periods, with varying degrees of intensity. The decision on which approach to adopt largely depends upon local

circumstances: for example, the ambition and needs of the local community; the availability of funding; the scale of other supporting infrastructure improvements. Decisions can also relate to the expectation of the delivery funding body and the stakeholders of the delivery board – for example, at Transport for London (TfL) there is an embedded expectation to extend the reach of PTP each year to more households, participants and London boroughs.

Some standard definitions

- 4.4 Given the variation of approaches to PTP, this report seeks to apply common terminology to ensure comparative assessments can be made. Table 4.1 sets out a summary of the definitions used within this report.

Table 4.1: Summary of definitions	
Terminology	Definition
Targeted households	The total number of households within the defined project area that are specifically targeted for the project
Contacted households	The absolute (or percentage) number of targeted households where contact is made (i.e. excludes those that were not contactable by phone or door knocking)
Participating households	The absolute (or percentage) number of contacted households who agree to participate in PTP initiative
Service sheet	Form on which participants can request PTP materials
PTP materials	A range of products including bus, walk and cycle maps, green driving guides, health advice and promotional goods
Home visit	One-to-one meeting, in the home, with a trained advisor dealing with mode-specific issues (for example, ‘cycle maintenance’ or ‘using the bus’)
Field Officer/ Travel Advisor	Representative of the project team responsible for disseminating PTP materials to the public

The benefits of PTP

- 4.5 Reported evidence to date (DfT, 2004) suggests that PTP can lead to a 7–15% reduction in car driver trips amongst the targeted populations in large urban areas. In smaller urban and rural areas, the reduction in car driver trips is more modest at around 2–6%. The schemes delivered to date have also seen a number of other reported benefits from PTP, including:

- increased walking and cycling, and associated health benefits;
- increased public transport use (with resultant increase in revenue for public transport operators);

- increased viability of local shops and businesses;
- improved interaction between different players within the community.

4.6 In 2003, the DfT part-funded 14 pilot studies to test different approaches to PTP (DfT, 2005). Of these pilot studies, those that targeted residential populations (rather than employers or schools) were the most effective at reducing car kilometres and increasing use of sustainable modes. All seven residential pilots saw a modal shift away from car use, with estimated reductions in car use over a year ranging between 0.05 million and 6.2 million car kilometres. The cost per car kilometre saved varied between 3p and 18p per kilometre (or between 2p and 10p if monitoring and evaluation costs are excluded). The effectiveness of the residential pilots appeared to be largely due to well-chosen target populations, sizeable intervention groups, and well orchestrated individualised marketing and personal travel planning. In addition, the consistent methodology used in five of these pilots made comparison of results possible.

4.7 Whilst there has been a degree of debate surrounding the reliability and validity of the scale of improvement claimed by some PTP projects (discussed in more detail in Chapter 9), the general consensus amongst practitioners is that PTP brings real, tangible benefits to local communities. In Australia, where the greatest experience of PTP programmes has been gained over the last 10 years, the Australian Road Research Board reported in 2004 'TravelSmart Household has been demonstrated, in Perth and elsewhere in Australia and overseas, to be a highly effective means of achieving voluntary travel behaviour change, substantially reducing the level of car use.'

PTP procurement options

4.8 In addition to the diversity of different approaches to PTP, there are also a number of different procurement options that can be applied. These can be broadly defined as:

- **In house delivery of PTP** – local authority led schemes, where all of the resources necessary to deliver the PTP programme are managed by the local authority (for example, the latest Nottingham City Card PTP Programme);
- **Outsourced delivery of PTP** – local authority secures a preferred partner to deliver the entire PTP programme (for example, the PTP component of the Worcester Sustainable Travel Town project);
- **Partnering** – local authority appoints consultancy partner to work jointly on the delivery of the PTP programme (for example, TfL appointed Steer Davies Gleave to provide strategic guidance and assist with the management and delivery of the PTP programme);
- **Training/mentoring** – local authority appoints consultancy partner to offer training and strategic support (for example Brighton and Hove appointed Steer Davies Gleave in Year 1 of their PTP programme to undertake background work whilst officers were being appointed, and to subsequently train those officers to enable them to take a lead role in following years);

- **Developer-led PTP** – developer tasked with delivering a PTP programme through an appropriate planning condition (for example, at Queen Elizabeth Park in Surrey, where PTP formed an important part of the residential travel plan for the site).

The process of behavioural change

- 4.9 PTP seeks to overcome individual psychological barriers to the use of sustainable travel options, and hence its development has been informed by ideas and theories relating to behaviour and marketing. The Appendix provides a summary of relevant theories and considers how PTP approaches used in practice relate to these. It also reports some key findings from research studies that have examined in depth the behavioural impacts of PTP-type interventions and which allow insights to be gained on PTP design.
- 4.10 Table 4.2 summarises how travel behaviour can be influenced to change and ‘levers’ which PTP can use to achieve this.

Table 4.2: Process of behavioural change	
How behaviour can be influenced	What are the levers?
<ul style="list-style-type: none"> • Deliberation of behaviour 	<ul style="list-style-type: none"> • Visible project in community • Personal contact • Travel conversation • Offer of free materials
<ul style="list-style-type: none"> • Changing perceptions 	<ul style="list-style-type: none"> • Information • Marketing
<ul style="list-style-type: none"> • Increasing behavioural control 	<ul style="list-style-type: none"> • Personal advice and support
<ul style="list-style-type: none"> • Changing social norms 	<ul style="list-style-type: none"> • Working with media/community organisations • Use of role models • Encouraging word-of-mouth communication • Involving all household members
<ul style="list-style-type: none"> • Making behavioural plan 	<ul style="list-style-type: none"> • Personal journey plan
<ul style="list-style-type: none"> • Setting behavioural goal 	<ul style="list-style-type: none"> • Personal commitment
<ul style="list-style-type: none"> • Experimenting with behaviour 	<ul style="list-style-type: none"> • Incentive (e.g. free bus ticket)
<ul style="list-style-type: none"> • Reinforcing behaviour 	<ul style="list-style-type: none"> • Gifts • Positive feedback • Loyalty club

What techniques can be used?

4.11 Within the UK PTP market, two distinct commercial providers of services and PTP delivery techniques currently dominate, based upon techniques developed by the early adopters of PTP. These providers are:

- **Sustrans/Socialdata**, who promote TravelSmart^{®2} (using the IndiMark³ technique developed by Socialdata and promoted together with Sustrans in the UK); and
- **Steer Davies Gleave (SDG)**.

4.12 These providers offer different types of service, broadly summarised below.

Sustrans/Socialdata: TravelSmart/IndiMark

4.13 This approach was originally aimed at infrequent users of sustainable modes who indicated that they would like to change their travel behaviour. It initially provided specific information, motivation and system experience relating to public transport services with the idea that, by having public transport information provided to them, the target group would be more likely to use those services. The process has developed over time and has become more targeted towards encouraging a modal shift for specific journeys, discouraging car use and encouraging public transport as well as more sustainable modes – in essence, a process built around the principles of dialogue marketing.

4.14 Research conducted by Brög and Mense, in support of the IndiMark approach to PTP, suggests that convincing people that they only needed to change their travel behaviour to sustainable modes once or twice a week, rather than making a complete change in lifestyle, can have a great effect on overall levels of car use on a given day. This ‘homeopathic’ approach to changing travel behaviour is advocated through the following flow mechanism:

motivation and empowerment → partnership and dialogue →
personalised and customised → ‘possible trips’ and ‘small changes’.

4.15 Brög and Mense summarise the IndiMark approach as: **direct contact** → **motivation** → **information** → **system experience**. Market segmentation undertaken within the process enables material to be effectively targeted and ensures resources are placed where they are most likely to have a positive effect on travel behaviour. Harbutt and Meiklejohn state that the key determinants of successfully encouraging travel behaviour change through the IndiMark process are identified as:

- voluntary involvement of households, which helps to ensure that only those residents that have a genuine interest in altering their travel behaviour are encouraged by the schemes;
- direct contact to help identify an individual’s travel needs;
- focus on specific individual benefits to encourage change in travel behaviour;

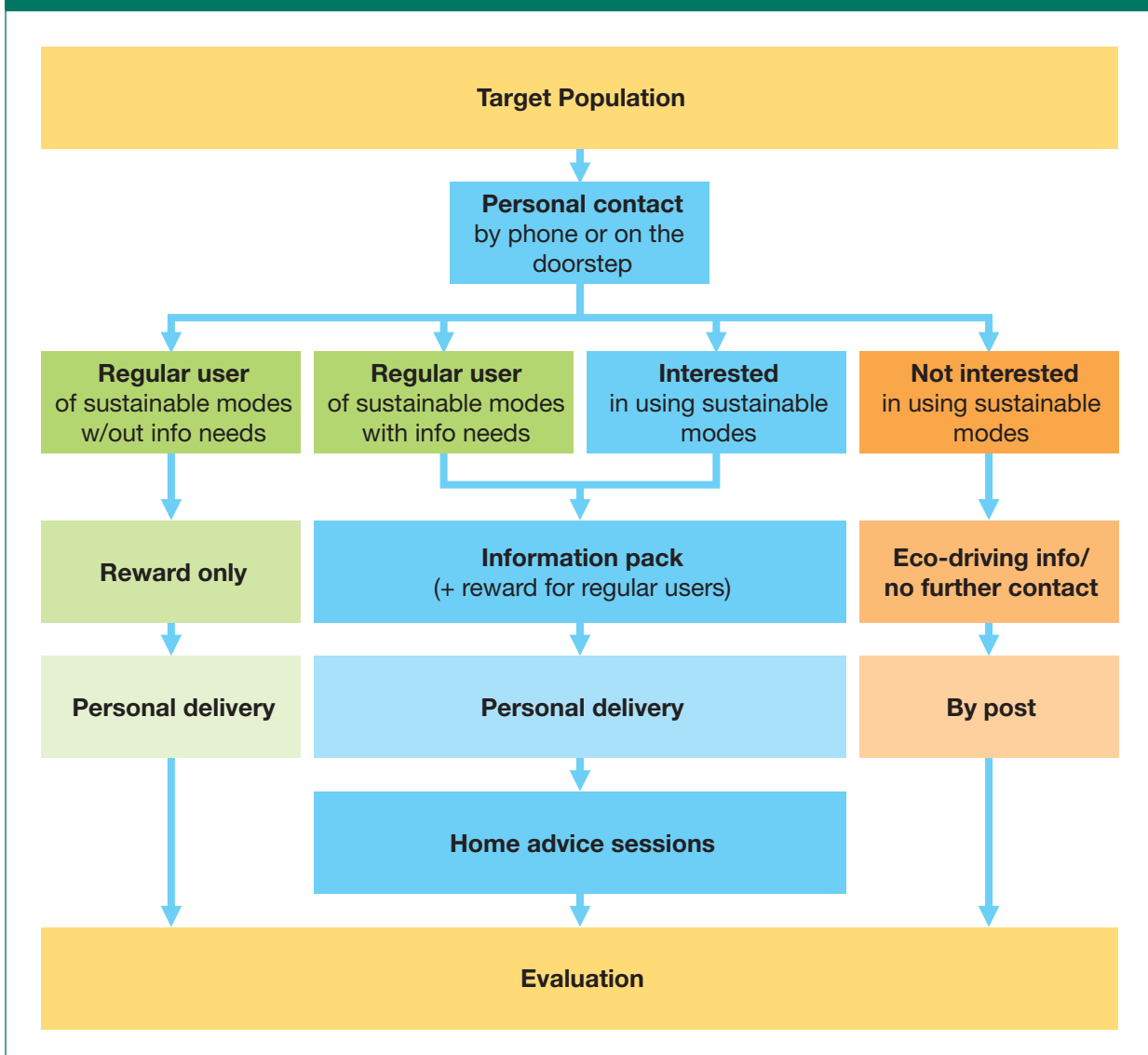
² TravelSmart is registered by Sustrans as a trademark in the UK.

³ IndiMark is registered by Socialdata as a trademark in Germany.

- provide practical and realistic travel and activity information;
- facilitate initial experiences of sustainable travel through motivation and incentives;
- provide feedback of the study as a whole to the target groups in order to provide positive reinforcement of sustainable travel choices;
- connect people to existing organisations for their ongoing travel and activity information needs.

4.16 The TravelSmart/IndiMark process is shown in Figure 4.1.

Figure 4.1: TravelSmart/IndiMark process



4.17 In summary, the TravelSmart/IndiMark approach focuses on providing access to personally relevant information, advice and support about travel options. It is based on the hypothesis⁴ that many people have become habitual car users and are unaware of alternative travel options available and would be encouraged to use alternatives if more aware of them. It is based on offering a set of information from which people can choose and interpret for themselves, rather than seeking to present them with messages to persuade them to change their behaviour.

4.18 TravelSmart/IndiMark can be summarised as involving the following behavioural ‘levers’:

- inducing deliberation of behaviour through the profile of the initiative itself, personal contact and offer of materials;
- explicitly reinforcing positive behaviour through gifts (which might be expected to have a positive effect on social norm and affect associated with behaviour);
- implicitly changing beliefs and attitudes (‘perceptions’) associated with travel options through offering choice of information so that participant can select relevant information and evaluate it;
- explicitly encouraging trial of positive behaviour through incentive (which may subsequently lead to change of beliefs and attitude);
- Explicitly increasing perceived and actual behavioural control to carry out positive behaviour through personal advice and support;
- Implicitly encouraging mutual support within household (and potentially within community) of behavioural change through a household-based approach nested within a community (which might be expected to have positive effect on social norm).

Steer Davies Gleave

4.19 Steer Davies Gleave has an established history of delivering PTP projects. They typically offer a mix of PTP support services to their project partners in the UK, underpinned by an approach which is based broadly around a conversationalist model. The support services offered by Steer Davies Gleave vary from project to project, and can range from: undertaking the entire PTP process; through to training and mentoring of local authority officers.

4.20 Historically, Steer Davies Gleave were the pioneers of the *travel blending* concept (during the period 1996–2000), which involved people completing seven-day travel diaries as a means of identifying opportunities for change. *Travel blending* now forms just one resource within the Steer Davies Gleave approach, which, through conversation with a household, provides a range of tools in order to reduce the need for travel through combining activities or destinations, as well as stimulating modal shift.

⁴ The hypothesis is supported by evidence from research undertaken by Sustrans/Socialdata into travel behaviour and the potential for change (for example the baseline surveys for the sustainable travel towns)

4.21 For projects that are managed by Steer Davies Gleave in their entirety, the following summarises the key components:

- **Pre-engagement phase:** Learning about the community and their perceptions of the area.
- **Engagement:** Initial contact is made by letter (providing advance warning of contact), followed by direct contact through phone, door-knocking, presence at community events/activities and approaches from the public at the local project office.
- **The conversation:** Involves a trained travel advisor exploring the values of the household (e.g. potential motivators – time, money, health, environment or independence) and explaining the project tools.
- **Time for change:** Project tools are delivered to households who are given the opportunity to trial sustainable travel alternatives.
- **Reinforcement:** Feedback on the findings of the trial through any combination of local events, a presence at meeting places and congratulations.

4.22 In summary, the Steer Davies Gleave approach to PTP, which has been employed in Bristol and Darlington and informed the approaches taken in Brighton and London, involves personal contact with individuals in target areas by travel advisors and engagement of participants in a short, door-step conversation. The travel advisors are trained to listen out for characteristics of travel needs, behaviour and key motivators and to determine what type of message and information are relevant to the participant. At the end of the conversation it is mutually agreed what information and incentives are to be provided.

4.21 The Steer Davies Gleave approach can be summarised as involving the following behavioural ‘levers’:

- inducing deliberation of behaviour through the profile of the initiative itself, personal conversation and offer of materials;
- implicitly changing beliefs and attitudes (‘perceptions’) associated with travel options through suggesting relevant information for evaluation;
- explicitly encouraging trial of positive behaviour through incentive (which may subsequently lead to change of beliefs and attitude) and challenge;
- explicitly increasing perceived and actual behavioural control to carry out positive behaviour through personal advice and support;
- implicitly encouraging mutual support within household (and potentially within community) of behavioural change through a household-based approach nested within a community (which might be expected to have positive effect on social norm);

- explicitly reinforcing positive behaviour through loyalty club (which can have positive effect on social norm and affect associated with behaviour).

4.22 There are a number of commonalities between the TravelSmart/IndiMark and Steer Davies Gleave approaches. One difference of emphasis between the two approaches is that the travel advisors used in Steer Davies Gleave PTP seek themselves to identify appropriate resources relevant to the participant, whereas in TravelSmart/IndiMark participants are provided with a menu of information from which to select. What appears to be a convergence of PTP in the UK to a common approach in many respects may be considered to be a consequence of learning what is effective from past experience (for example, in achieving high participation rates) and/or a consequence of common requirements from clients.

Other approaches

4.25 In addition to the approaches delivered by Sustrans and Socialdata, and Steer Davies Gleave, there are additional models which are emerging from recent UK projects. These are:

- area-wide PTP delivered through direct mailing to households of timetable specific information (as developed by Nottingham City Council for the City Card project);
- community delivery models (for example the Merseytravel CATCH project, which uses trusted sources within the community to deliver PTP advice, followed up by detailed analysis and highly personalised advice).

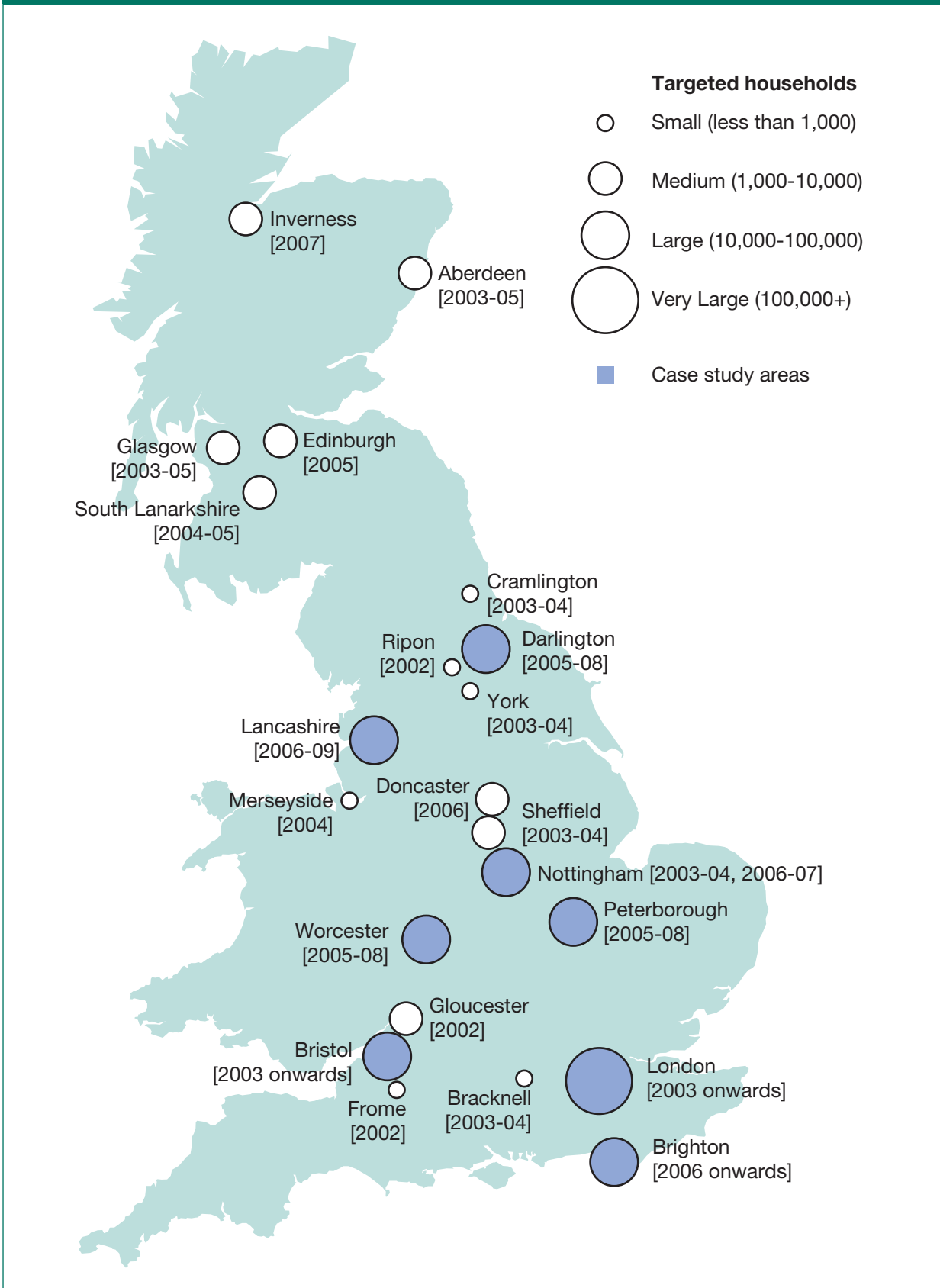
4.26 Internationally, PTP has adopted similar principles to those being employed in the UK, with the exception being Japan, where a greater emphasis is placed upon engagement and subscription by the individual – in particular the importance placed upon the setting of behavioural goals. In Fujii and Taniguchi's meta-analysis of Japanese PTP case studies, they noted that PTP projects differed based on whether they:

- motivate a change in travel behaviour (e.g. referring to social impacts of transport);
- request a goal and/or plan from participant for changing travel behaviour;
- provide customised or general information.

UK PTP locations

4.27 Figure 4.2 shows the location of the UK schemes developed to date.

Figure 4.2: Locations of residential PTP projects

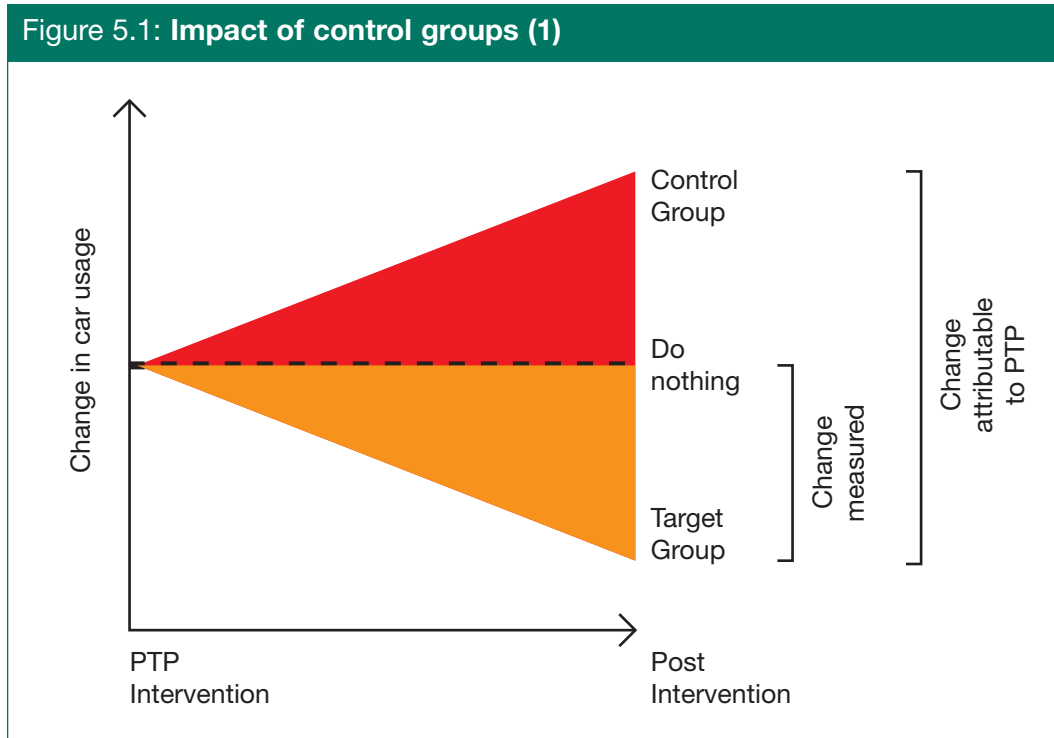


5 Objective 1: The key elements of success

The reported success of the case study sites

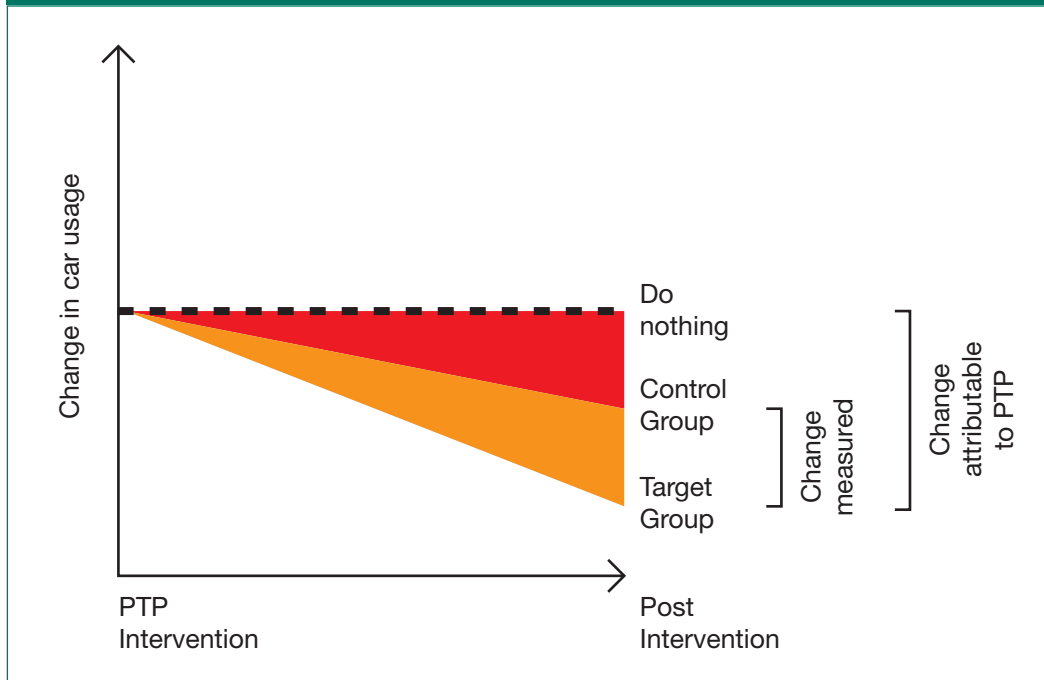
- 5.1 Before examining the characteristics of projects that determine success, this chapter firstly summarises the reported success of the case studies. It is difficult to generalise findings from single case studies, and hence a meta-analysis is provided, where results are presented and synthesised for the different case studies. **When reviewing the figures within this chapter, it is important to note that details on the evaluation methodologies and analyses conducted for each project are provided in Chapter 9 (including issues associated with statistical inference), and readers are advised to refer to this for a fuller appreciation of the context and reliability of these results and the issues arising.**
- 5.2 Table 5.1 provides background information on the dates of the projects, the number of households involved in the project, and the number of persons surveyed in project areas. Reported impacts on travel behaviour of the PTP projects are presented in Tables 5.2 to 5.4. These are based on results from travel surveys, as reported in project evaluation documents. Limited information is available from other sources with which to compare and corroborate survey results.
- 5.3 Table 5.2 reports the changes in modal split (for personal trips) *measured* from the before and after surveys of the targeted households in the project areas. This does not take account of background trends in travel behaviour (counterfactual). Table 5.3 reports the changes in modal split (for personal trips) *attributed to PTP projects*. In the latter case the results attempt to take into account the counterfactual (what would have happened if PTP projects had not taken place) and are based on the before-and-after surveys of the targeted households adjusted to take into account the before and after surveys of the control group households (there are important implications of this which are discussed later).
- 5.4 Table 5.4 reports changes in car use in terms of car driver trips and car distance travelled. Where possible, these are reported in terms of both changes *measured* from surveys and changes *attributed to PTP* (as explained in paragraph 5.3). Note that we do not report the percentage change in the use of other modes, as these can be misleading, particularly when a mode is little used in the before situation (a small increase in the number of trips can represent a large percentage change).
- 5.5 The distinction between the control group and target group is an important one. The following graphs seek to conceptualise how the control group effect is taken account, and are included for illustrative purposes only.

- 5.6 Figure 5.1 represents a scenario where car use in the control group has increased whilst car use in the target group has decreased when compared to an assumed 'do nothing' scenario (i.e. where car use is defined as remaining static between the before and after surveys). This indicates that the total 'change attributable to the PTP intervention' is greater than the 'change measured'.



- 5.7 Figure 5.2 shows a scenario where the 'change attributable to PTP' is less than the 'change measured'. This is due to the level of car use in the control group and the target group falling concurrently.

Figure 5.2: Impact of control groups (2)



- 5.8 Most of the results shown are based on Sustrans/Socialdata travel surveys and reporting. This provides a degree of consistency in the methodologies used and assists comparisons of results between projects. However, inevitably there remain differences between projects and, where these are considered to be critical, they are noted in this section.
- 5.9 The results apply to all individuals from targeted households in project areas and not just project participants, since the surveys that have been conducted have sought to obtain representative samples of the targeted households of project areas and not just of the project participants. Post-survey sample weighting has been applied to seek to ensure representative samples. This means that results can be considered to apply to the full set of targeted households and, for example, incorporate diffusion effects from participants to non-participants. However, it is to be noted that it would be beneficial to have results shown separately for project participants and non-participants to gain understanding of the specific impact of PTP and this has not been provided in evaluation reports.

Table 5.1: UK Case study project details

Project	Approach/ service provider	Project date	Project area population/samples				
			Targeted house- holds	Contacted house- holds	Participating house- holds	Before survey sample size (persons)	After survey sample size (persons)
Sustrans/Socialdata led evaluations							
Bristol: Bishopsworth ¹	TravelSmart	Sep 02	1192	867	473	378	363
Bristol: Hartcliffe	TravelSmart	Oct-Nov 03	1200	959	619	374	332
Bristol: Bishopston ²	TravelSmart	Apr-Jun 03	2254	1761	1221	456	478
Bristol: Southville	TravelSmart	Apr-May 05	2535	2053	1664	2053	779
Darlington Ph 1	SDG	May-Aug 05	11591	7779	4579	1237	1156
Darlington Ph 2	SDG	May-Aug 06	10744	7599	5205	1246	1224
Lancashire: S Ribble	TravelSmart	May-Jul 06	10713	9813	6907	I/A	634
Lancashire: Skerton, T'holme, Bare	TravelSmart	Autumn 06	8500	6941	5265	I/A	561
Nottingham Lady Bay	TravelSmart	Sep-Nov 03	353	232	172	601	450
Nottingham Meadows	TravelSmart	Sep-Nov 03	538	285	188	535	402
Peterborough Ph 1	TravelSmart	Sep-Dec 05	6500	5336	3267	1073	1228
Peterborough Ph 2	TravelSmart	Apr-Jul 06	6103	4981	2530	I/A	1111
Peterborough Ph 3	TravelSmart	Sep-Dec 06	5653	4573	2611	I/A	I/A
Worcester Ph 1	TravelSmart	Sep-Dec 05	6300	5247	3210	978	962
Worcester Ph 2.1	TravelSmart	Apr-Aug 06	4775	3913	2127	I/A	784
Worcester Ph 2.2	TravelSmart	Sep-Nov 06	3829	3133	1762	I/A	805
Other Evaluations							
Brighton Year 1	BHC/SDG	Jun-Oct 06	10000	9800	3150	1968	2000
Bristol: Easton	SDG	Jan-Mar 06	3469	2112	1538	54	32
Bristol: Clifton/Cotham	SDG	Aug-Nov 06	5629	2917	1667	I/A	I/A
London Kingston	TfL/SDG	May-Aug 06	22299	15386	7503	I/A	I/A
London Harringey	TfL/SDG	Sep-Nov 06	31324	19122	10722	I/A	I/A
London Sutton	TfL/SDG	Sep-Oct 06	70000	I/A	I/A	I/A	I/A
Nottingham CC Pilot	NCC	2006	2130	2130	2130	No survey	No survey
Nottingham City Card	NCC	May 2007	160000	120000	120000	I/A	I/A
Notes: 1 After survey sample size applies to second after survey (20 months after project). Sample size for first survey (6 months after project) was 321. 2 After survey sample size applies to second after survey (9 months after project). Sample size for first survey (3 months after project) was 450. I/A – information awaited and not available at time report written N/R – not reported							

5. Objective 1: The Key Elements of Success

Table 5.2: Reported changes in modal split measured in UK project areas

Project	Approach/ service provider	Months after project of survey	Other factors in project area	Changes in modal split (%)				
				Walking	Cycling	Public Transport	Car driver	Car passenger
Sustrans/Socialdata led evaluations								
Bristol: Bishopsworth	TravelSmart	6	None	21→21 0	0→0 0	9→13 +4	45→43 -2	24→22 -2
Bristol: Bishopsworth	TravelSmart	20	Bus upgrade	21→23 +2	0→1 +1	9→12 +3	45→40 -5	24→23 -1
Bristol: Hartcliffe	TravelSmart	6	Bus upgrade	22→23 +1	1→2 +1	10→13 +3	45→40 -5	21→21 0
Bristol: Bishopston	TravelSmart	3	None	37→40 +3	4→5 +1	6→7 +1	37→34 -3	15→14 -1
Bristol: Bishopston	TravelSmart	9	None	37→40 +3	4→5 +1	6→7 +1	37→34 -3	15→14 -1
Bristol: Southville	TravelSmart	2	None	N/A	N/A	N/A	N/A	N/A
Darlington Ph 1	SDG	6	STT initiatives	23→23 0	1→1 0	12→14 +2	44→44 0	20→18 -2
Darlington Ph 2	SDG	6	STT & CDT initiatives	25→31 +6	1→2 +1	11→11 0	44→39 -5	19→17 -2
Lancashire: S Ribble ¹	TravelSmart	8	CIVITAS initiatives	14→20 +6	2→2 0	5→7 +2	55→50 -5	23→21 -2
Nottingham Lady Bay	TravelSmart	7	Bus upgrade	27→30 +3	7→8 +1	9→10 +1	39→36 -3	18→16 -2
Nottingham Meadows	TravelSmart	7	Bus upgrade	34→34 0	3→4 +1	26→26 0	27→26 -1	10→10 0
Peterborough Ph1	TravelSmart	6	STT initiatives	20→24 +4	5→6 +1	7→8 +1	43→38 -5	25→24 -1
Worcester Ph 1	TravelSmart	6	STT initiatives & new bus service	N/A	N/A	N/A	N/A	N/A
Worcester Phase 2.1 ¹	TravelSmart	6	STT initiatives	N/A	N/A	N/A	N/A	N/A
Worcester Phase 2.2 ¹	TravelSmart	6	STT initiatives	N/A	N/A	N/A	N/A	N/A
Other evaluations								
Brighton Year 1 ¹	BHC/SDG	I/A	Cycle initiatives	14→19 +5	1→2 +1	I/A	54→50 -4	I/A
Bristol: Easton	SDG	9	None	N/A	N/A	N/A	N/A	N/A
<p>Notes:</p> <p>1 Detailed evaluation reporting has not been available in time for this report but headline evaluation results have been provided.</p> <p>I/A – information awaited and not available at time report written</p> <p>N/A – not available due to nature of evaluation performed</p> <p>Excludes projects for which information is not readily available for any column</p>								

Table 5.3: Reported changes in modal split attributed to PTP in UK project areas

Project	Approach/ service provider	Months after project of survey	Factors in control area	Trend in control area	Changes in modal split (%)				
					Walking	Cycling	Public Transport	Car driver	Car passenger
Sustrans/Socialdata led evaluations									
Bristol: Bishopsworth	TravelSmart	6	None	Walk increase	23→21 -2	0→0 0	8→13 +5	44→43 -1	25→22 -3
Bristol: Bishopsworth	TravelSmart	20	Bus upgrade	PT increase	20→23 +3	0→1 +1	11→12 +1	45→40 -5	23→23 0
Bristol: Hartcliffe	TravelSmart	6	Bus upgrade	PT increase	20→23 +3	1→2 +1	12→13 +1	45→40 -5	21→21 0
Bristol: Bishopston	TravelSmart	3	None	Stable	38→40 +2	4→5 +1	5→7 +2	37→34 -3	15→14 -1
Bristol: Bishopston	TravelSmart	9	None	Stable	38→40 +2	4→5 +1	5→7 +2	38→34 -4	14→14 0
Bristol: Southville	TravelSmart	2	No control	No control	N/A	N/A	N/A	N/A	N/A
Darlington Phase 1	SDG	6	STT initiatives	Stable	23→23 0	1→1 0	12→14 +2	45→44 -1	19→18 -1
Darlington Phase 2	SDG	6	I/A	I/A	I/A	I/A	I/A	I/A	I/A
Lancashire: South Ribble ¹	TravelSmart	8	CIVITAS initiatives	Car driver increase	14→20 +6	1→2 +1	6→7 +1	57→50 -7	21→21 0
Nottingham Lady Bay	TravelSmart	7	None except city trends	Walk decrease, car driver increase	25→30 +5	7→8 +1	8→10 +2	41→36 -5	19→16 -3
Nottingham Meadows	TravelSmart	7	None except city trends	Walk decrease, car driver increase	32→34 +2	3→4 +1	25→26 +1	29→26 -3	11→10 -1
Peterborough Phase 1	TravelSmart	6	STT initiatives	Stable	20→24 +4	5→6 +1	7→8 +1	43→38 -5	25→24 -1
Worcester Phase 1	TravelSmart	6	STT initiatives	Stable	24→28 +4	3→4 +1	9→11 +2	64→56 -8	N/A
Worcester Phase 2.1 ¹	TravelSmart	6	STT initiatives	Stable	28→32 +4	3→4 +1	10→11 +2	60→53 -7	N/A
Worcester Phase 2.2 ¹	TravelSmart	6	STT initiatives	Stable	26→31 +5	2→3 +1	5→6 +1	67→60 -7	N/A
Other evaluations									
Brighton Yr 1 ¹	BHC/SDG	I/A	I/A	I/A	I/A	I/A	I/A	I/A	I/A
Bristol: Easton	SDG	9	No control	No control	N/A	N/A	N/A	N/A	N/A
Notes:									
1 Detailed evaluation reporting has not been available in time for this report but headline evaluation results have been provided.									
I/A – information awaited and not available at time report written									
N/A – not available due to nature of surveys and evaluation performed									
Excludes projects for which information is not readily available for any column									

5. Objective 1: The Key Elements of Success

Table 5.4: Reported changes in car use in UK project areas

Project	Approach/ service provider	Months after project of survey	Other factors in project area	Factors in control area	Trend in control area	Changes in car use			
						Change measured		Change attributed to PTP	
						Car driver trips (%)	Car distance travelled (%)	Car driver trips (%)	Car distance travelled (%)
Sustrans/Socialdata led evaluations									
Bristol: Bishopsworth	TravelSmart	6	None	None	Walk increase	N/R	N/R	N/R	N/R
Bristol: Bishopsworth	TravelSmart	20	Bus upgrade	Bus upgrade	PT increase	-10	N/R	-9	-8
Bristol: Hartcliffe	TravelSmart	6	Bus upgrade	Bus upgrade	PT increase	-10	N/R	-12	-11
Bristol: Bishopston	TravelSmart	3	None	None	Stable	N/R	N/R	-10	N/R
Bristol: Bishopston	TravelSmart	9	None	None	Stable	N/R	N/R	-11	-13
Bristol: Southville	TravelSmart	2	None	No control	No control	-10 *	N/R	N/R	N/R
Darlington Phase 1	SDG	6	STT initiatives	STT initiatives	Stable	-3	-6	-4	N/R
Darlington Phase 2	SDG	6	STT & CDT initiatives	I/A	I/A	-11	-11	I/A	I/A
Lancashire: South Ribble ¹	TravelSmart	8	CIVITAS initiatives	CIVITAS initiatives	Car driver increase	I/A	I/A	-13	I/A
Nottingham Lady Bay	TravelSmart	7	Bus upgrade	None except city trends	Walk decrease, car driver increase	N/R	N/R	-12	-12
Nottingham Meadows	TravelSmart	7	Bus upgrade	None except city trends	Walk decrease, car driver increase	N/R	N/R	-10	-10
Peterborough Phase 1	TravelSmart	6	STT initiatives	STT initiatives	Stable	-12	N/R	-13	-15
Worcester Phase 1	TravelSmart	6	STT initiatives & new bus service	STT initiatives	Stable	N/R	N/R	-12	N/R
Worcester Phase 2.1 ¹	TravelSmart	6	STT initiatives	STT initiatives	Stable	N/R	N/R	-13	N/R
Worcester Phase 2.2 ¹	TravelSmart		STT initiatives	STT initiatives	Stable	N/R	N/R	-11	N/R
Other evaluations									
Brighton Year 1 ¹	SDG/BHC	I/A	Cycle initiatives	I/A	I/A	-6	I/A	I/A	I/A
Bristol: Easton	SDG	9	None	No control	No control	N/A	N/A	N/A	N/A
<p>Notes:</p> <p>¹ Detailed evaluation reporting has not been available in time for this report but headline evaluation results have been provided.</p> <p>I/A – information awaited and not available at time report written. N/A – not available due to nature of surveys and evaluation performed</p> <p>N/R – not reported. Excludes projects for which information is not readily available for any column</p> <p>*Not measured. Inferred based on changes in average frequency of use of non-car modes and reference to previous Bristol results.</p>									

Project outcomes

- 5.10 Taking the nine PTP projects for which there are comparable results (three for Bristol, two in Darlington, one in Lancashire, two in Nottingham, one in Peterborough) a decrease in the measured modal share of car driver trips of up to 5 percentage points has been obtained with a project **arithmetical mean⁵ decrease of 4 percentage points in the share of trips which are car driver**. The modal share for walking trips is measured to increase by up to 6 percentage points, with project arithmetical mean increase of 3 percentage points. The project arithmetical mean changes for other modes are 1 percentage point increase for cycling, 1 percentage point increase for public transport and 1 percentage point decrease for car passenger. Exactly the same overall outcomes are obtained when taking into account background trends (counterfactual) and estimating the modal share changes attributed to PTP projects. However, for individual projects there are important differences, depending on whether considering changes measured or changes attributed to PTP, and these are discussed subsequently.
- 5.11 The change in car driver trips *attributed* to PTP varied from a decrease of 4% to a decrease of 13% with project **arithmetical mean decrease of 11% in car driver trips**. This is based on 11 PTP projects (same projects as before, with the addition of the three Worcester projects and the exclusion of the Darlington Phase 2 project). The *measured change* in car driver trips has only been reported in six projects and varied from a decrease of 3% to a decrease of 12% with project **arithmetical mean decrease of 9% in car driver trips**.
- 5.12 The change in car distance travelled *attributed to PTP* varied from a decrease of 8% to a decrease of 15%, with project **arithmetical mean decrease of 12% in car distance travelled**. This is based on six PTP projects. It is not possible to report the change in car driver distance *measured*, as this has only been reported in two projects.
- 5.13 In total, across all of the case study sites, there have been some **229,000 targeted households**, with **170,000 contacted households** (74% of targeted households), and with **100,000 participating households** (59% of contacted households).⁶

Summary discussion

- 5.14 The results show a degree of consistency in car use reduction across projects, with walking most usually being the mode that is found to increase. A summary discussion of the results for individual projects is now provided.
- 5.15 Two after surveys were conducted for the **Bristol Bishopsworth PTP** project, and this allows comparison of short-term (6 months) and

⁵ Project arithmetical mean is simply the mean value reported for the nine projects without any weighting for project size.

⁶ These figures exclude the populations associated with the Nottingham City Card scheme, which provides targeted household information, but is not comparable to the other case study sites, as there is no direct household dialogue or any ability for a household to opt out.

medium term impacts (20 months).⁷ The measured changes suggest that car driver trip reductions are increasing over time in the project area (from 2% initially to 5% after 20 months), with immediate and sustained impact on public transport use (4 percentage points initially and 3 percentage points after 20 months). The lagged impact on car use is not consistent with results of PTP elsewhere where short-term impacts have been noted. The major bus upgrade that occurred between the two ‘after’ surveys appears to have had no positive impact on public transport use in the project area, even though a positive impact is recorded in the control area. When taking into account counterfactual, the car driver result is unchanged but initial public transport change attributed to PTP of 5 percentage points diminishes to 1 percentage point. The results for Bishopsworth are counterintuitive and, given the relatively small sample sizes, it is suggested that caution should be applied to these results.

- 5.16 For **Bristol Hartcliffe** the results suggest that mode share for car driver trips decreases by 5 percentage points, regardless of whether account is made of counterfactual (which captures effect of bus upgrade). For other modes, taking account of counterfactual suggests that it is walking trips that are influenced by PTP and not public transport. This seems reasonable, but, given that the control area is the same as used for Bishopsworth, it is suggested that caution should again be applied to these results.
- 5.17 Two ‘after’ surveys were conducted for the **Bristol Bishopston** PTP project, which enables comparison of short-term (3 months) and medium-term impacts (9 months). The results suggest impacts are similar at these two different time scales (3 percentage point decrease in car driver trip mode share). The counterfactual indicates no background change in travel behaviour and hence does not affect reported outcomes.
- 5.18 A simplified survey approach was used in **Bristol Southville**, which involved in the ‘after’ survey asking about average categorical frequency of walking, cycling and public transport, rather than use of a travel diary. The reported 10% reduction in car driver trips is an approximation inferred from changes in average frequency of use of these three modes and reference to previous Bristol results. No control area survey was conducted, and hence there is no counterfactual used.
- 5.19 For **Darlington Phase 1** the results suggest modest change in modal split, with only public transport registering a change of more than 1 percentage point (increase of 2 percentage points). Taking into account counterfactual does not affect this result, as little change in modal split is recorded in the town-wide control area. With **Darlington Phase 2** the measured changes indicate a large increase in share of trips by walking

⁷ In the evaluation for Bristol Bishopsworth (6 month result) a different method of taking into account counterfactual has been used than has been used in other evaluations. We have carried out a new calculation which is consistent with the method usually used in Sustrans/Socialdata evaluations.

(6 percentage points) and a large decrease in the share of trips by car driver (5 percentage points). The data taking account of the town-wide control group is currently being re-analysed and will be reported fully in early 2008.

- 5.20** For **Lancashire South Ribble** detailed evaluation reporting has not been available in time for this report, but headline evaluation results have been provided. These show that, similarly to Darlington Phase 2, a large increase in share of trips by walking (6 percentage points) and large decrease in share of trips by car driver (5 percentage points) is measured. Taking into account the town-wide control trend suggests the decrease in the share of car driver trips attributable to PTP is even higher at 7 percentage points. This suggests that any broader initiatives being taken in the town are not being effective, and indicates the need for careful checking of counterfactual, and for close attention to be paid to the validity of the control data results.
- 5.21** The **Nottingham Lady Bay** results suggest an increase in share of trips by walking (3 percentage points) and a decrease in the share of trips by car driver (3 percentage points). Taking into account city-wide control trend magnifies the estimated change in the mode share of these two modes to 5 percentage points. Again, corroboration for whether the measured city-wide trends recorded from the control data were valid would have been helpful. This should have been possible from other data available in Nottingham. For **Nottingham Meadows** the results of the survey of the target area suggest no significant change in modal split but taking into account the same background trend as Nottingham Lady Bay indicates car driver decrease of 3 percentage points. For both these project areas bus upgrades occurred at the same time as PTP and may contribute to the impacts.
- 5.22** The **Peterborough Phase 1** results suggest an increase in share of trips by walking (4 percentage points) and decrease in share of trips by car driver (5 percentage points). There is no change in modal split in control data, representing wider town background trend, hence taking this into account does not affect these results. It might have been expected that wider initiatives in town would have influenced modal split and the effect of PTP would have been lower than that measured when taking this into account. Again, reference to town-wide travel trends to confirm the validity of the counterfactual would have been beneficial.
- 5.23** In **Worcester** detailed evaluation reporting has been available in time for this report for Phase 1 but only headline evaluation results have been available for Phases 2.1 and 2.2. In Worcester the after surveys in the target areas have asked about average categorical frequency of walking, cycling, public transport and car, rather than involved travel diary. To estimate change in trips requires assumptions about relationship between average categorical frequencies and number of trips (which has been achieved using baseline travel survey data). Similar city-wide surveys have been conducted at the same time as the 'after' surveys and are used as controls. This has enabled estimates of car driver trip reduction of 12% for Phase 1, 13% for Phase 2.1 and 11% for Phase

2.2. In the area targeted in Phase 1 (Warndon) a new bus service coincided with the PTP project in 2005 and may have contributed to the measured effect, although bus patronage data suggests this is not the case (longstanding bus services serving the area experienced increases in patronage). The control data shows a small city-wide increase in car use, which is surprising, given other Sustainable Travel Town initiatives being delivered across the city. If this is invalid, then the car reduction effect of PTP will have been exaggerated.

- 5.24 For **Brighton Year 1** detailed evaluation reporting has not been available in time for this report, but headline evaluation results have been provided which suggest measured increases in mode share for walking trips of 5 percentage points, cycling trips of 1 percentage point and a reduction in car driver trips of 4 percentage points. It is assumed that these initially reported results apply to all persons in project area and not only PTP participants. It has not been identified that any surveys are being carried out in a control area.
- 5.25 In **Bristol Easton** limited resources were available for evaluation, with small survey sample sizes one consequence of this (the reporting of the figures within the final evaluation report which clearly sets out the constraints and limitations of the data analysis is to be commended). The travel survey conducted in the project area achieved 54 responses in the before survey (from 500 posted surveys) and 32 responses in after survey, therefore there is a large amount of uncertainty associated with the results. The results showed a 7 percentage point reduction in the share of 'car-as-driver' trips (from 41% to 34%) amongst participants, whilst non-participants increased their share of 'car-as-driver' trips by 6 percentage points (from 33% to 39%). Given the low sample sizes, a supporting survey was undertaken to provide supplementary information. It was distributed to 1,555 people who had participated in the project and from the 262 responses 40% said they had decreased car driver trips and 10% said they had increased car driver trips. No surveys were carried out in a control area in this project. The reliability of survey results is an issue to consider for all the survey results and is discussed further in Chapter 9.

Control group effect

- 5.26** The discussion of project results has shown that, at the level of the individual project, the estimate of the counterfactual can have a large bearing on the result obtained for the effect of PTP. There are a number of important aspects raised by the use of control groups, including whether the control area is representative (i.e. directly comparable to the target area) and whether sufficient sample sizes are used. It is also important that the results for the control data are corroborated with other data (aggregate data for car traffic, for example) before being used in estimating PTP effect. To date, this has only been undertaken on a limited number of occasions.
- 5.27** For this reason it is suggested that reference is made to both the measured changes in travel behaviour (Table 5.2) and the changes in travel behaviour attributed to PTP (Table 5.3) when reviewing PTP findings. In referring to measured changes, regard will need to be paid to other factors than PTP that could have affected results (some information on other factors is provided in Tables 5.2–5.4).

Other reported findings

- 5.28** Other information on personal travel is reported in some of the evaluation reports than that presented and discussed so far. For completeness, a summary of this data (where available, and as reported) is shown in Table 5.5.

Table 5.5: Reported change in mobility by participants (mean values, per day) attributed to PTP

Project	Approach/service provider	Activities		Travel time		Trips		Distance (miles)	
		before	after	before	after	before	after	before	after
Bristol Bishopsworth	TravelSmart	1.4	1.4	50	52	2.4	2.4	15	16
Bristol Hartcliffe	TravelSmart	1.5	1.5	56	57	2.5	2.5	16	17
Bristol Bishopston	TravelSmart	1.7	1.7	57	57	3	3	15	15
Nottingham Lady Bay	TravelSmart	1.7	1.7	62	62	3.1	3.1	20	19
Nottingham Meadows	TravelSmart	1.5	1.5	56	57	2.7	2.7	14	13
Darlington Phase 1	SDG	1.7	1.6	58	57	2.9	2.9	23	20
Overall average		1.6	1.6	57	57	2.8	2.8	17	17

Note:

Figures include the effect of the control group. Figures are 'as reported' in project evaluation reports, and have not been tested for levels of statistical significance

- 5.29 It has often been found that the proportion of trips carried out in a local area increases after a PTP project, which supports the general result that walking increases at the expense of car trips. Changes in the purposes of trips undertaken (in total or by mode) have not shown any consistent trend.

What makes an effective project?

- 5.30 An examination of the characteristics of the case study sites, combined with in-depth discussion with practitioners has enabled the project to explore the components of the PTP process and characteristics of sites that are most likely to lead to successful outcomes. Reference has also been made to experience outside the case studies in other PTP projects conducted worldwide. The findings that follow are largely based on qualitative insights. It has not been possible to conduct a statistical meta-analysis of quantitative impacts from the case studies and relate these to determining factors. There are a number of reasons for this, most notably that results are only available for a fairly modest number of projects (between ten and fifteen), and that unidentified differences between sites are likely to make it unreliable to attribute project impacts to particular case study characteristics.
- 5.31 In broad terms, the success of a PTP project can be broken down into:
- the project process;
 - the geographic and population context.
- 5.32 Each of these is discussed in detail below.

Project process

Important operational aspects

- 5.33 The scale and complexity of PTP projects demands strong project management skills, and an imperative for a detailed project plan. The components of the project plan, and their importance in project performance, are discussed below.

Stage 1: Planning

- 5.34 **Management arrangements:** An important early consideration is to determine how the PTP project will be undertaken, i.e. whether it will be undertaken solely by the local authority, outsourced, or in partnership with a consultancy. This decision will help to shape the entire project – for example, Brighton and Hove are responsible for the management of their PTP project but have worked with Cycling England and a consultant partner on planning the project and staff recruitment (to be discussed in a later section), whereas Worcestershire, Peterborough and Darlington work closely in partnership with their consultancy partner to deliver the PTP component of larger scale sustainable transport projects.

- 5.35** A fundamental of all of the case studies has been rigour in the management of data and household information throughout the processes, generally using a structured database to record progress on each activity during the project lifecycle.
- 5.36 Funding plan:** The majority of evidence found through the case study process has pointed towards the use of government or EU grants to undertake PTP. However there are a number of places that have used capital grant and/or revenue funding, for example Brighton (where decriminalised parking revenue has contributed to the project budget). Bristol has been innovative in the use of LTP funds to deliver a modest annual programme of PTP projects. Once funding has been sourced, allocations for different elements of the plan need to be made, for example how much will be spent on materials, staffing, publicity, promotions, gifts, and rewards. Further information is provided in Chapter 8.
- 5.37 Developing a strong and coherent brand and identity:** Branding is important as a constant message of the project, be it a sign, symbol, slogan or word. The brand and identity aid recognition and build awareness amongst a population. Whilst the extent of this is difficult to articulate, qualitative evidence from the PTP travel advisers in Darlington, for example, has reported that acceptance of the initiative on the doorstep has grown significantly over the life of the project, which in part is attributed to brand awareness. Some of the branding work has been done in house by local authorities, for example *Journeyon* developed by Brighton and Hove, whilst others have employed professional marketing consultancies and/or designers to develop a strong brand – for example, Darlington’s *Local Motion*. Sustrans has developed (and registered as a UK trade mark) the *TravelSmart* brand to identify *IndiMark* applications delivered in conjunction with Socialdata, although local authorities may choose to use another local brand name, for example *My Travelchoice* used in Peterborough. Often the brands encompass a full suite of measures, for example in the Worcester STT project, *Choose How You Move*.



The sustainable travel towns logos

- 5.38** Some brands have had to be ‘tweaked’ to capture the attention of the public or secure an improved local buy-in. For example, Peterborough changed their brand slogan from *Your travelchoice* to *My travelchoice*, personalising their message and making it more user-friendly. Testing brand identities through focus groups has proven to be a useful tool – for example, to ensure any messages to be portrayed are not diluted or lost

through overly sophisticated branding. Importantly, brands should be non-mode-specific. Branding can be, and has been, transferred on to gifts, incentives, information materials, and travel advisor uniforms, increasing recognition and awareness at different stages of the project.

- 5.39 **Media planning:** Involving the media, either at a local or national scale, has been an important component at all of the case study sites. Media involvement ranges from the local authority press officer to national TV and newspapers to local radio stations. The media can help to ‘make or break’ a story – positive and negative articles/coverage have been experienced by most of the case study sites. Two strengths exhibited by Brighton and Hove have been the full engagement of a local authority press officer and the fact that a senior journalist at the local newspaper is a keen cyclist. The latter of these two strengths may be based on luck, but seeking out this person was definitely a well informed decision.
- 5.40 Another issue for consideration is when the media are to be involved. If they are involved before the project has started, any negative stories may delay a project, resulting in the project getting off on the wrong foot, or even preventing a PTP project from starting at all. Lancashire were advised by their consultants to avoid too much in the way of preliminary marketing to avoid a similar scenario. But, if there are existing successful travel awareness campaigns in place, some pre-project media exposure can prove a useful tool. Statistics from any previous travel behavioural research undertaken can prove to be very useful in grabbing people’s attention, for example in Worcester, where the baseline survey figures of the Choose How You Move programme provided powerful messages on the potential for change in travel behaviour. The case studies have shown that it is important that the media are involved at the launch of a project and are informed of noteworthy news as the project continues.
- 5.41 A project promoted by the Welsh Assembly in Powys received negative press coverage, following a very small number of inappropriate personal journey plans that were sent to households using an automated system. It is understood that the technology behind the project was based upon postcodes and had been developed for the urban environment, and hence when applied to a rural community had resulted in some inefficient trips being suggested. A small number of households had contacted the media and a negative headline ensued. Whilst the obvious solution to this problem is to ensure the project processes do not result in inappropriate messages being presented to households, a more active engagement of the press from an early stage of the project could have prevented the negative story being presented in the way in which it appeared in the local newspaper.
- 5.42 In Bristol, the local newspaper reported a strong headline on the success of the PTP project, yet, in the editorial section of the same edition, wrote a negative story on how the PTP project was a ‘waste of money’. This vividly demonstrates how the perceptions of PTP (and possibly the wider issue of car use and acceptability) vary even within media groups.

- 5.43 Event planning:** Careful planning of PTP specific events (pre-launch and during the contact stage), or piggy-backing on other sustainability events, can bring positive benefits to the project. They can be used to both promote the PTP project and/or to receive feedback from the public on ways to improve the process.
- 5.44** Members of the TfL PTP team arranged a highly successful bike party (with professional support from an event management company) which attracted local media coverage and achieved a recollection figure of 47% amongst the target area (irrespective of attendance). Many of the case studies make efforts to link in with national campaign days, e.g. In Town Without My Car and local events such as the London to Brighton bike ride. The launch events for the *Local Motion* project in Darlington used a Kylie Minogue look-alike to attract media and public attention in the streets of Darlington.



Brighton JourneyOn event. Photo courtesy of Brighton and Hove City Council

- 5.45 Engaging with partners:** Partners play a significant role in any successful PTP project, including any appointed consultancy support. Whilst the formal relationship between the local authority and consultant will be bound by the terms of contract, there is evidence from the case study site practitioners that engagement between the local authority and the consultancy partner, at all stages of the PTP process, is important in creating an inclusive project, which is perceived as contributing to a more effective project process. This includes regular meetings, combined with ad-hoc visits to field offices, call centres, even undertaking door to door sessions with PTP households.
- 5.46** In Perth (Australia), the maturity of the PTP market place has enabled them to create a PTP framework contract, which enables them to streamline the process of deploying PTP teams for future projects. Melbourne have also adopted alternative models of consultancy

partnership through the appointment of three separate teams of consultants, each working at the same time, to the same brief, but in different sectors of the city. This has enabled Melbourne to independently verify the outcomes of the PTP process (rather than a particular consultancy model), with all 3 consultancy outcomes independently evaluated and audited.

- 5.47 Other partners generally include the local bus (and rail) operator, local bike shops, contacts in the health sector, pubs/bars and local attractions. Despite experience to date in the UK only demonstrating small increases in bus use as a result of PTP interventions, local bus operators are important for several reasons. They can provide:
- valuable knowledge of bus network and timetable changes during the course of the study (and can work with the project team to ensure a degree of consistency during the project phases);
 - up-to-date marketing material (including timetables and bus route maps) relevant to the project (either to be used directly or as the basis for project specific material);
 - bus drivers to undertake any public transport focussed home visits;
 - valuable corroborative data on the impacts of the intervention;
 - (free of charge or at discounted rates) day, week or travel passes that can be given to participants as gifts or be used as an incentive.
- 5.48 PTP has to date provided only limited tangible outcomes for bus operators, in terms of patronage (and farebox revenue) and improved bus satisfaction (Peterborough has seen its BVPI for bus satisfaction increase from 45% (2003) to 62% (2006), and satisfaction with transport information increase from 43% (2003) to 53% (2006) during the implementation of the PTP programme). Bus operators involved in the PTP process have also used the process as a source of feedback and to gain a greater understanding of the issues affecting their customers.
- 5.49 It is however, important to note some caution over the acceptability of PTP amongst all bus operators – for example, a discussion with a UK bus operator identified that the case has still not been fully made for PTP, and that, in their view, a significantly more cost-effective way is to deliver targeted advice and timetable updates through direct mail shot. This is at odds with the evidence from Perth (Australia) presented later in Table 5.13, and later in Chapter 10, although it does accord with the evidence of the Number 30 pilot project delivered in Nottingham in 2006, which adopted a semi-personalised approach more akin to direct marketing of the service (see case studies summary report for further information). Some practitioners believe that the argument over whether or not PTP truly works will only ever be resolved when hard evidence relating to bus use (and/or walk, cycle, car counts) is demonstrated.

- 5.50** Local bike shops and pubs/bars have assisted PTP projects with the provision of incentives for participants. In the past, TfL have produced ‘worth the walk vouchers’ that entitled participants to a free drink on arrival to a local bar. Similarly, Brighton held a meeting with 17 local, independent cycle traders to discuss partnership and discounts that any of the traders could offer and eventually struck a deal for a 20% discount. Interestingly, an alternative approach is for the discount offered at the local bike shops to be secured through a sealed ballot, whereby all the bike shops are offered the opportunity to state their own offer to the project, and these offers were then subsequently offered to targeted households. This has the advantage of potentially driving forward the extent of the offer to appear to be attractive (compared to other shops) and minimises the risk of a shop not partaking in the project over concerns of not being able to offer the standard discount.
- 5.51** There is limited evidence to date of a significantly active role of the health sector as key partners in UK PTP projects, and this is an area where further potential exists. In most cases this is a reflection on the restricted funding made available for PTP pilot projects (for example, in Worcester the bid for funding for the STT, which was fully supported by the local PCT, had all of the essential health impact assessment costs removed, thus limiting the ability of the PCT to take a serious role within the project, or for the health impacts associated with PTP to be fully assessed).
- 5.52** Given the strengthening links between the transport and health sectors, particularly through the promotion of walking and cycling under the ‘smarter choices’ programme, the future closer involvement of health professionals within PTP projects is considered an important consideration. The health sector has extensive experience of social and dialogue marketing techniques from within their own fields⁸ – lessons from which could be applied to future PTP programmes to maximise effectiveness based upon experiences in both fields.
- 5.53** Advisory boards are a useful tool to engage other potential partners and stakeholders. The Darlington STT project benefits from a STT Reference Group with representation from a local businessman, the Local Strategic Partnership, business and voluntary sectors, the health sector, the education sector, Government Office North East, cycling groups, disability groups, the Cabinet member for transport and the opposition spokesperson for this issue.
- 5.54** All of the case studies have a dedicated officer(s) who is tasked with liaising with local communities and provides a point of reference for the public to contact.
- 5.55** **Information materials, gifts and incentives:** All case study sites have undertaken an information audit to determine what information they already have available to distribute to participants and what information will need to be created. Even where materials exist, these need to be reordered or redesigned to include the project brand to sit amongst a

⁸ Note: it is understood that the effectiveness of these approaches within the health sector remains to be fully proven.

suite of new materials. The task of creating PTP specific base materials is a significant one – in particular to ensure that maps and timetables are locally accurate and portray logical and appropriate information. This is particularly important for local walking routes (where shortcuts are often un-marked on national map bases), and hence it is particularly important to validate and test materials locally before full scale printing. Final proofing (in detail) ensures that any off-site changes to the map (for example undertaken by specialist design teams) are accurate and valid.



Example incentives, Nottingham

5.56 Some of the creative work has been done in house, whilst other projects have outsourced their creative work. Brighton and Hove employed Steer Davies Gleave to undertake creative work in year 1, and to train the incoming officers, such that they could take over the running of the project in the longer term. Project materials are now produced internally, with the PTP officers working alongside the in-house design team. TfL has used both an external marketing design team and TfL group marketing. A designer within the PTP team develops much of the creative work once the overall look and feel of the branding has been developed by the external marketing design team. In most cases the printing of materials has been undertaken externally.

5.57 Advice noted from the Australian case studies suggests an oversupply of materials is better than an undersupply as extra printing can prove to be expensive. Also any extra materials can be used at community events. There are no hard rules regarding the volume of information made available during a typical PTP project, and this is determined locally based upon availability and the necessity for information provision in specific sectors. All projects demonstrated careful thought as to which project materials were necessary, and balanced this against the dangers of providing excessive choice on the request form (service sheet).



Example information materials, Worcester

5.58 It is worth noting that TfL undertake focus groups with local stakeholders and members of the general public to discover people's views on and reactions to their local area, transport options and logos. They also test their new creative information materials on the people asking people

about the colours used, logo placement, type of paper, etc. The original creative designs for the Sutton information materials were considered by the PTP project team to be not fully supportive of the messages to be portrayed, and this was reinforced by the focus group participants, who indicated that the print was too glossy, printed on non-recycled paper, and looked dated, cheap and uninspiring. This resulted in the designers going back to the drawing board and the end result was information materials printed on recycled paper, with a simple, green coloured theme and a dandelion as a logo (naturalistic and representative of the environment). It is also worth noting that the public like to see local pictures on information leaflets.

- 5.59 The use of organisational logos on information materials can influence the way the material will be viewed by the public. This depends on their opinion of the organisation in question, in particular the local authority, therefore thought needs to go into whether the local authority's name and logo should be used or not. The overall views expressed during the case study interviews were that the use of local authority logos should be avoided (or at least minimised) and that it is the local brand for the project that dominates.
- 5.60 There have been some notable differences between the case studies as to the use of gifts/rewards to give to people who are already travelling sustainably. Worcester and Peterborough distribute gifts to people who already use sustainable transport (and request a gift), whilst in Brighton resources (monetary and a range of incentives) are clearly focused on incentivising people to change their travel behaviour. It is uncertain as to what extent an understanding of behavioural theories has contributed to these decisions (further discussion on behavioural theories underpinning PTP is provided in the Appendix).
- 5.61 TfL are currently giving serious consideration to who gifts/rewards should be given to and at what stage of the PTP process should they be distributed. For example, should a gift be given to residents to encourage them to participate, halfway through the project to support their on-going involvement or at the end of the project as a thank you for participating?
- 5.62 The case study sites that used gifts and/or incentives had to consider what to buy early in the project life cycle. Incentives that offer participants the opportunity to trial new modes are particularly successful, as the trialling of new modes is seen as a key element for encouraging people to change their travel behaviour (noted by many of the case study interviewees). Gifts and incentives need to directly target the audience they are addressing. A good example of this comes from Perth, where the delivery team have really tried to get 'into the minds' of the target audience. Four branded items have been produced to remind the householder of the PTP intervention at 'point of decision' times – for example, the coffee mug provides a reminder at the breakfast table, and a key ring carries a direct message to remind the householder that some trips may be possible without the car.

5.63 Table 5.6 shows the distribution of the most popular gifts across the case study sites, while Table 5.7 shows the distribution of incentives.

Table 5.6: Information materials issued			
	Total material required (% of households targeted)		
	Minimum (%)	Average (%)	Maximum (%)
Bus timetables	10	85	157
Cycle information	11	47	102
Walking information	11	39	77
Other bus information	5	35	100
Cycle maps/routes	9	32	73
Local travel maps	8	31	68
Walking maps	9	30	89
Rail timetables	9	23	36
Bus stop timetables	9	23	28
City travel maps	14	19	23
Greener/eco driving	5	15	23
Pledge card	1	14	21
Oystercard information	5	8	12
Personal journey plans (all modes)	1	6	25
Tube information	0.3	4	8
Home visits	1	1	2

Table 5.7: Incentives distributed

	Incentives/gifts required (% of households targeted)		
	Minimum (%)	Average (%)	Maximum (%)
Shopping bag	32	40	49
Other (retail vouchers etc)	15	24	33
Free bus tickets (day tickets)	0.1	21	100
FM radio	7	17	24
Alarm clock	6	13	19
Pen	5	10	16
Mug	6	10	15
Pedometer	0.3	0.4	0.7
Cycle computer	0.3	0.4	0.4

5.64 Agree an evaluation process: Evaluation issues need to be considered from the outset of the project, as all evaluations should include some form of pre-intervention survey to record a baseline of existing travel behaviour. Surveys should also be undertaken after the intervention, and, for the larger scale case studies, interim surveys have been used to assess performance during the course of the project. The use of corroborative data and qualitative information should also be considered at an early stage in the project process.

5.65 The overall effectiveness of any PTP project is generally quantified in terms of either: project processes (or outputs); and project outcomes.

Project processes (outputs)

5.66 Given the relatively recent addition of PTP to transport planning (particularly in the UK), PTP projects typically report success based upon both output and outcome indicators. Project output indicators include:

- number of targeted households approached;
- number of contacted Households
(number and percentage of targeted households);
- number of participating households
(number and percentage of contacted households);
- number of requests for information
(number and percentage of participating households);
- average number of days from request of information to delivery;
- number of additional household visits.

5.67 In essence these relate to the performance of the process, as well as providing a solid indication on the scale and deliverability of the project and the efficiency with which the project was completed.

Project outcomes

5.68 In addition to project output indicators, outcome-focused indicators are used to measure the change in travel behaviour or attitudes as a result of the PTP intervention. Typical project outcome indicators include:

- reduction in vehicle kilometres travelled;
- change in walking (trips and percentage change);
- change in cycling (trips and percentage change);
- change in bus use (trips and percentage change);
- change in train use (trips and percentage change);
- change in car share (trips and percentage change);
- change in total trips;
- change in trip length;
- participating household satisfaction;
- satisfaction of additional household visits;
- programme recognition and familiarity;
- change in attitudes/beliefs;
- LTP and best value performance indicators relating to the transport network (most notably satisfaction with public transport and satisfaction with public transport information).

5.69 In accordance with other areas of transport planning (particularly since the introduction of guidance for Local Transport Plans), there is a general focus on outcome indicators, although, within the full evaluation reports for each of the case studies, there remains a strong willingness to report on project processes (in effect the efficiency of the project delivery). This is true for both outsourced and in-house PTP programmes, recognising that, particularly on large-scale projects, the link between project efficiencies and overall project performance remains an important one. As the market continues to mature and a greater emphasis is placed upon value for money, it is likely that the success may well be measured through a smaller number of focused (and consistent) indicators that can be readily evaluated without significant burden on the project budget.

5.70 Evaluation methods, techniques, processes and procedures are discussed in much more detail in Chapter 9.

- 5.71 Phasing of PTP:** To date (particularly overseas), there is some experience of smaller-scale (often referred to as pilot) schemes being used to test a range of PTP delivery tools and to facilitate an initial understanding of household motivators for change. Whilst there is no necessity to undertake a smaller-scale project as a first phase, adopting this approach does allow the delivery team to ‘iron-out’ any problems for future rollouts (evaluation issues, contact strategies, responses to information materials) and estimate the changes in travel behaviour, value for money and public perception of the project.
- 5.72 Delivery plan:** Early consideration should be given to the production of a detailed delivery plan, which includes timelines for each task involved in the process, interdependencies, roles and responsibilities and procedures to record and report activity. Larger scale PTP projects have used a memorandum of understanding between all partners to secure the ‘buy-in’ and certainty of all tasks in the project process.

Stage 2: Pre-intervention stage

Gathering address/telephone details

- 5.73** Gathering information that is required to inform the contact stage requires significant effort. The use of as many sources as possible will help to produce an accurate and robust list of contact details. Sources of information include the electoral roll, standard and commercial telephone databases, and lists of registered businesses. The Data Protection Act is applicable to all data gathering exercises.
- 5.74** The data gathered is usually set up and stored in a database where each household is allocated a household ID number that allows for the recording of information concerning all the households in the target area, such as the information gained by the travel advisor visit/phone call, and the current status of each household and future activities required.
- 5.75** The efficiency with which the household details are collated and stored is an important component of the overall effectiveness of the project process.

Local stakeholder engagement and support

- 5.76** Engagement with local stakeholders to inform them of the PTP project is essential. It provides the opportunity to provide validated and accurate findings of the project and helps to secure senior level buy-in to the project. It also provides the opportunity to gain additional useful local knowledge. The field team manager in Sutton made contact with mobility groups in the area and as a result managed to find out about additional services that had not been picked up at the planning stage, e.g. mobility services. He also contacted, and worked with, the ethnicity officer at the local authority.
- 5.77** Although there is only limited UK experience of involvement of the health sector, PTP practitioners generally agree that further engagement with the health sector would be advantageous. A means of increasing engagement levels amongst health professionals might be to provide

a greater focus on shared priorities and targets of mutual benefit – for example, a focus upon an increase in physical activity. Brighton operates a *health referral project* that includes a nurse explaining different healthy travel options and their respective health benefits to referred patients.

Setting up a field office

5.78 A project field office provides the central hub of activity for a PTP project, located within the local area (or at least the town/city where the PTP intervention is taking place). This allows for greater efficiency in delivering complete information packs to participating households. If travel advisors are out in the field, it is easier for them to pick up any additional materials or for a member of the field office to reach the travel advisors.

5.79 A field office also provides a meeting place for all members of the project team. The field office in Sutton is located in the middle of the borough, ensuring good access to all areas. For large-scale projects, or those covering different phases, it is important to be flexible with the location of the field office and be prepared to move premises to remain in the heart of the current operations. In Brisbane, three field offices were established and mobile distribution centres set up to cope with the demands of distributing material to 180,000 people (80 tonnes of printed material were delivered by a fleet of 50 cycle couriers).



Bristol field office. Photo courtesy of J. Bewley/Sustrans

5.80 The field office does not necessarily have to be located in a stand-alone building – it could for example be a dedicated room within a Council Office.

Setting up a call centre

5.81 Depending upon the PTP approach, and whether the means of contact with targeted households will be predominantly by phone or through direct door contact, there may be a requirement to establish a call centre. In the case of Socialdata's operations, they have established a central call centre in Bristol which deals with all of the UK based projects. This offers an economy of scale and allows for the continuity of staff (i.e. staff can be permanently employed dealing with several

different projects per year). The only potential risk is the lack of local knowledge, and hence, as is the case in the Socialdata call centre, it is imperative that staff are fully trained and have access to local materials to ensure they can answer local questions over the phone. Similarly, it is important to establish standard questions and answers such that telephone call staff can readily respond to a range of the most likely questions. Staff recruited to work in call centres must have a good telephone manner, ideally combined with a professional and well informed view on sustainable transport. Socialdata carry out first stage interviews over the telephone as an immediate way of identifying whether a candidate has the potential telephone manner to succeed as a call centre operative.



Socialdata call centre, Bristol
 Photo courtesy of Jonathan Bewley
 © Sustrans/Socialdata 2006.

Staff recruitment

- 5.82 PTP is a human resource intensive process, and there is often a need for significant numbers of short-term staff. Consultancy partners may have an already assembled team of travel advisors (although, given the scale and locational requirements of projects, additional project-specific staff will almost always need to be recruited), but local authorities need to advertise these positions along with other positions such as team leader, resource assistants and data entry clerks. In Sutton, TfL have been able to maintain a skilled travel advisor from one of their earlier projects who is now able to fill the role of project team manager. In Brighton the managerial and organisational role has been taken on by local authority officers, one of whom was recruited specifically for the PTP work. Interestingly, she comes from a customer service background with little experience in transport.
- 5.83 Recruitment strategies differ amongst local authorities – for example, Brighton recruited many of its PTP staff through community networks, whilst TfL recruited temporary staff through recruitment websites, local papers, shop windows and local venues.
- 5.84 Travel advisors need to have bright, bubbly personalities with an interest in sustainable transport and a good conversational manner. Brighton specified that they were looking for creative, enthusiastic individuals with either: a degree or good work experience. The experience of PTP

practitioners has indicated that women tend to gain higher participation rates. Travel advisors with special skills, such as being able to offer bike services on the spot, are considered to be particularly valuable.

- 5.85 Those local authorities that have delivered programmes in house have generally used the services of a consultant for the employment of temporary staff, as the process would take too long to complete in house (as local authority procedures would have to be adhered to). Staff continuity was identified as being particularly desirable amongst all of the case studies, although in the case of the STT projects, which are running over a period of four years, the PTP component is generally undertaken in the spring and autumn, making staff retention during the summer and winter periods difficult.
- 5.86 In Darlington, two office staff are employed throughout the three-year programme. For the delivery phases a team of ten to twelve travel advisors is recruited and trained. ‘Listening skills and the ability to converse with a wide variety of people’ are the essential skills required. The travel advisor team is recruited for around four months, paid £8–10 per hour, and works a 37.5 hour week (including some evenings up to 20:00 and some Saturdays).



Sutton advisors. Photo courtesy Smarter Travel Sutton

Staff training

- 5.87 Most temporary staff will not have any experience in this specific field, so staff training is crucial. The main elements of a typical training programme cover:
- becoming acquainted with team members;
 - comprehension of the PTP programme, especially the household contact element;

- becoming familiar with the different types of paperwork;
- learning about the information materials and to whom each piece of information is most suited;
- appreciating some of the complexities of changing travel behaviour;
- learning different conversational techniques;
- becoming familiar with the scheme area;
- learning strategies for dealing with challenging situations.

- 5.88 In Sutton, travel advisors have been given yellow t-shirts embroidered with the Smarter Travel Sutton logo as well as a blue rain coat. These uniforms help to increase visibility of the project and also provide the travel advisors with a degree of credibility. There is evidence to suggest that public recognition of the travel advisors, coupled with a pleasant doorstep experience reflects well on the local authority.
- 5.89 Case studies have noted that the ‘recycling’ of travel advisors for further projects is ideal, as the training they undertake is very specific and any previous specific experience is an advantage.

Pre-intervention surveys

- 5.90 Pre-intervention surveys provide important knowledge of the background characteristics of the local population, and when used and presented effectively, can have a strong impact in steering the direction of the project. There are several advantages to a well planned and delivered pre-intervention survey:



Baseline survey data collection
 Photo courtesy of Jonathan Bewley
 © Sustrans/Socialdata 2006

- providing baseline data to inform the scope of the PTP project (although this needs to ensure it does not conflict with the need to provide an independent baseline survey for evaluation purposes);
- providing missing knowledge on local perceptions and attitudes towards transport;
- providing knowledge to inform local stakeholders of the opportunity for travel behaviour change;
- identifying deficiencies in the sustainable transport networks that can be delivered alongside the PTP programme;
- informing the targets to be adopted by the PTP project;
- inform other transport strategy and policy areas (for example the local transport plan and regional transport strategy).

- 5.91 It may be possible in some circumstances to use previously collated knowledge, although this relies on the availability and quality of such supporting data sets.

Pre-intervention incentives

- 5.92 Evidence from Australia has demonstrated that effectiveness is enhanced if subjects are offered pre-implementation incentives (note: important that this is offered without prejudice, i.e. a gift and not a bribe). These incentives can relate to travel, but may relate more generally to environmental improvement (i.e. a free recyclable shopping bag and shopping vouchers). They do not necessarily need to refer to the forthcoming PTP project – simply raising people’s overall awareness of a related environmental issue. Offering a community based product (such as a shopping bag) can also assist in creating a visible presence, similar in concept terms to a pre-launch advertising campaign.

Launch of the PTP project

- 5.93 A big launch of the PTP project (or umbrella project) provides the opportunity to visibly promote the project to the target community. A number of the case study sites held such events publicising the project, inviting along TV stations, radio stations and members of the press to gain as much coverage as possible. Openly inviting the media means that project teams can talk about the scheme in detail and answer any questions, thereby controlling the story as much as possible. Extending the invitation to local councillors works well and also adds credibility the event and the scheme.



Pre-launch publicity, Peterborough

Introductory letter

- 5.94 Introductory letters have proved to be an effective way to communicate with the target audience, informing them about the project and to let them know to expect a travel advisor either knocking on their door or ringing them up. Evidence suggests that the letter is most effective if signed by a senior elected member (for example the mayor or leader of the council).

5.95 In one of the projects in London, the delivery of the introductory letters was undertaken by the travel advisors themselves, enabling them to feel more secure when approaching a house during the contact stage, knowing that the household had definitely received a letter informing the residents that they will be visiting.

5.96 It is important that the introductory letter arrives not more than five days before the first telephone call/door knock relating to the project (ideally less than two days before).

Collation and storage of information materials, gifts and incentives

5.97 Large-scale PTP projects demand careful consideration of the logistics and management of project materials. In most cases, the local field office established specifically for the project will be the central focus of information flows, and as such is the appropriate location for materials to be stored and collated.



Example Pre-Visit Letter, Sutton

5.98 In Sutton, the field office illustrates a logical way to collate and display information to be selected for the home information packs using storage shelves clearly designated into areas where separate walking, cycling and public transport materials are kept. This logical solution to the information display helps members of staff whose task it is to assemble the information packs to work in an efficient manner. An extra storage room for the sheer volume of materials is desirable.

5.99 Similarly, in Peterborough, the field office uses well-rehearsed procedures for managing the information and enabling the field staff to quickly and accurately assemble project materials based upon the household requests received.

Stage 3: Contact and advice stage

- 5.100 The contact and advice stage forms the main component of the PTP programme and comprises the one-to-one interaction with households.
- 5.101 In assessing the case studies, a number of operational issues have emerged, each of which has an impact on overall project effectiveness, and these are outlined below.

Provision of contact data to travel advisors/telephone callers

- 5.102 Efficiency in the use of contact details established during the planning stage is important. PTP demands rigour within the process to ensure that consistent messages are portrayed and households receive appropriate contact. For large-scale projects, the project team will be tasked with contacting several thousand households, each of whom may be contactable through different means (telephone and/or door knocking), and on several different occasions. Hence efficiency in the management of household details is essential, demanding a systematic approach to the contact process. In all cases, data used throughout the PTP process is managed through a database management system, which provides an essential resource to monitor the progress of the project and ensure consistency in how information is handled and used.

Timing of contact

- 5.103 Evidence from London, where the method of contact is through knocking on doors, shows it is best to contact households as soon as possible after the introductory letter has been delivered, ideally between 24 and 48 hours after the letter has been delivered. This short lag time helps to ensure that residents have heard about the project and the details are hopefully still fresh in their mind.
- 5.104 It is also important that the project team are persistent in their pursuit of the initial contact (whether by phone or door knocking), in order to achieve good participation rates (inevitably, on the first contact households may not be available). Projects differ in how they deal with this issue, and in some case studies use was made of the pre-intervention survey to determine the amount of effort that would be placed during different time periods (for example where the greatest opportunity for change is identified as being local trips made by mothers, then the timing of the contact was placed upon the daytime 10:00–14:00 period).
- 5.105 As a minimum, every household should receive at least three attempts to contact (one during the weekday daytime period, one during the weekday evening period, and one during the weekend period). Where the contact is by telephone, it may be possible to increase the number of attempts made to contact, as fewer resources are required for each attempt (a telephone call rather than personal visit to the household).
- 5.106 If a household is not contactable within the framework established for the project, then as a last resort a service sheet and accompanying letter should be hand-delivered, inviting the household to participate and to request appropriate information materials directly.

5.107 It is also important to note that the limited evidence available relating to telephone versus door knocking contact tends to suggest that contact rates by telephone are higher. In Bristol, for example, evidence suggests that, for telephone contact (of which multiple attempts were made to each household), the contact rate was in the order of 90%, whereas for door knocking (where five attempts were made at each household), the contact rate was 65%. Similarly, in the report of the Gloucester projects, one of the reasons (amongst others) for the difference in total cost between the two project areas targeted was the ‘higher proportion of initial contact made door to door’.

Approach of travel advisors

5.108 Whether telephone calling or door knocking, when first making contact, travel advisors should introduce themselves as clearly representing the project. The organisation they say they are representing is also very important. For example, a travel advisor saying that they represent the local authority may be met with a prejudiced opinion. For this reason travel advisors in London introduce themselves as representing Smarter Travel Sutton, rather than the Borough of Sutton or TfL.



Travel Advisors, Brighton. Photo courtesy of Brighton and Hove City Council

5.109 The introductory letter provides the travel advisors with a good starting point from which to start their conversation with residents. It is important for the travel advisors to inform residents that they are offering a free service and are on hand to help people with any questions they may have about travelling within the area and can provide residents with advice on alternative modes of transport. Travel advisors typically ask questions relating to perceptions of travel or whether a particular mode may interest members of the household, and accordingly offer related information materials. At some of the case study sites, related incentives were also offered. For example, TfL provides an Oyster card preloaded with £5 credit for households interested in using public transport.

5.110 Different travel advisors tend to develop their own conversational styles and ways to entice residents to participate. Evidence from Perth suggested that it was important to remain sensitive to participants, and be mindful of any issues such as obesity or mobility constraints. Alternatively travel advisors in Sutton are trained in the skills necessary to challenge (sympathetically) those residents who express disinterest in the project, enquiring as to why they are not interested.

- 5.111 The travel advisors in Darlington emphasise the principle of reciprocity at the end of their conversations stating words to the effect of ‘I’m going to send you x, y and z and you’re going to have a look at the resources I send you and see if you can try this’, rendering the conversational outcome as a deal.
- 5.112 Travel advisors that are contacting households via door knocking use a number of procedures that help to improve their safety whilst also increasing their visibility. Travel advisors tend to stay close together working in neighbouring roads and streets, and are also able to contact each other via mobile phone. Regular ‘meet-ups’ during the day are also important to discuss any recent issues/worries.
- 5.113 Depending upon the incentives available in a project, the travel advisors may be able to carry examples with them. For example, many of the travel advisors in Sutton use a bicycle to travel around and so wear the snap bands that are offered to households as incentives. Households are able to view the incentive first hand (its value and quality), which may have a positive impact and outcome.
- 5.114 Travel advisors have reported that people sometimes want to complain/comment about other things affecting their locality – for example, overgrown trees and rubbish collection. To provide assistance for situations like this, the Sutton travel advisors carry a ‘get out of jail free’ card with telephone numbers for the appropriate local authority department or local organisations, for example local churches, help for carers etc.
- 5.115 It is also important for the travel advisors to discuss the broader household requirements, ensuring that materials appropriate to all household members are requested. Having engaged with a member of the household it is important to maximise the value to be gained from this contact, by ensuring that messages, information and motivation are distilled by the primary contact to other household members.
- 5.116 For PTP projects where the primary contact is through telephone, it is important to use the conversation to engage with the household, in essence encouraging them to participate and to complete the service sheet (the request mechanism for project materials) during the telephone conversation. However, time pressures on households can sometimes make this difficult, and if an alternative call back time is not welcomed, then the travel advisors should always try to encourage the manual completion of the service sheet, to be mailed back to the project office at a later stage.

Replenishing of paperwork

- 5.117 Often the travel advisors that are contacting households via door knocking cannot carry everything that they may need in a shift. The opportunity for a fellow colleague to bring additional paperwork or relieve the travel advisors of completed paperwork is a useful tool to make the travel advisors job easier.

Completed household sheet/service sheets

5.118 Completed sheets detailing household details and information requests need to be analysed and actioned quickly, providing a fast turnaround from the point of request to delivery. Projects differ on how this is achieved, although generally use a database management system to record and process requests for each households. This has several advantages:

- it enables a record of the project to be maintained;
- it provides rigour in the way data is managed, accessed and stored;
- it enables the processing of service sheets to be undertaken remotely from the activities of the field office;
- it enables database procedures to be used to automate the production of household information requests, which can then be directly delivered to the assembly staff within the field office.



Peterborough service sheet

Team meetings

5.119 Team meetings during the contact stage are an important part of the PTP process – motivating the travel advisors and field staff and maintaining momentum within the study, combined with the ability to feedback to the wider project team the local issues arising.



Sutton Field Office.
Photo courtesy Smarter Travel Sutton

5.120 Field offices (and the call centre) for all Sustrans/Socialdata led projects record and publish a ‘quote of the day’. These are posted on the walls of the offices and are also relayed to the client. They serve as a strong motivational tool for the project team.

Community events

5.121 Community events provide an additional platform for contacting segments of the community who were not contactable by either telephone or door knocking. This method was used in Brighton, where travel advisors were required to staff travel stalls at events on Saturdays (predominantly in the target area). This was seen as a worthwhile use of time, as the stalls have attracted the general public’s attention, potentially increasing contact and participation rates. Additionally, piggy-backing on other local authority or transport related events is considered particularly relevant.

5.122 In Brisbane, PTP cafés have been established to support the project, in essence providing a drop-in centre for travel advice. The cafés offer free tea, coffee and soft drinks and the opportunity to discuss travel issues with an advisor.

Segmentation

5.123 The process of segmentation is an important part of the process of the contact stage. People are placed into different groups which differ from project to project and between consultancies. Examples of different segmentation styles are shown in Table 5.8.

Approach	Segmentation
TravelSmart/IndiMark	<ul style="list-style-type: none"> • Interested • Regular user with wish for information • Regular user with no wish for information • Not interested
Steer Davies Gleave PTP	<ul style="list-style-type: none"> • No generic segmentation. Use is made of the ‘conversation’ to ascertain which information is most relevant and/or placed into project specific segmentation group
London	<ul style="list-style-type: none"> • Participants – took resource • Already travelling sustainably • Non-participants (three separate reasons)
Nottingham CityCard	<ul style="list-style-type: none"> • Targets all households
Merseyside	<ul style="list-style-type: none"> • Discontented drivers • Aspiring environmentalists • Complacent car addicts • Reluctant riders • Die-hard drivers/no hoppers • Car-less crusaders

5.124 Segmentation is recognised as offering the potential for better targeted use of resources and more effective delivery in marketing. Anable et al. (2006) argue that psychographic methods (based on attitudinal and aspirational profiles) offer advantages over socio-demographic or behavioural based segmentation of travellers. Seven travel segments have been defined from a Scottish survey of travel awareness. In Merseyside six of these segments have been used (as listed above). It is argued that priority should be given to targeting the most amenable segments (e.g. discontented drivers, aspiring environmentalists) and that it may be most productive to encourage those already using alternatives to the car to do so a little more, to encourage experimentation with alternatives by those expressing willingness to try these and to increase awareness of those with no apparent inclination. A difficulty of this approach is identification in which segments people belong without initial research. A further concern currently with segmentation based on cross-sectional data of current attitudes/behaviour is that it may not be helpful in inferring what change in behaviour could occur. With further research on this (involving monitoring of pilot studies) this concern could be addressed.

Treatment of the segmentation groups

- 5.125** Significant differences have been noted among case studies regarding the treatment of different segmentation groups. No conclusions have been drawn as to which treatment style is the most successful, but the different approaches are worthy of note. For example, projects using the TravelSmart/IndiMark approach typically (although not always) send out an 'eco-driving' pack to 'not interested households', whilst households that are deemed to be a regular user of sustainable modes are offered the choice of whether to receive information or not.
- 5.126** On the other hand, the approach taken by TfL to residents who are not interested is to count them as non-participants, with no further involvement in the project, whilst people who agree to the receipt of green driving information are counted as participants. Furthermore, TfL segment residents who are already travelling sustainably as participants irrespective of information requests or not.
- 5.127** Table 5.9 shows the split between the different segmented groups within the case studies examined (figures refer to the percentage of contacted households).

Table 5.9: Household response rates by segmented groups

Project	Approach/ service provider	Interested (%)	Regular ST user with information needs (%)	Regular ST user without information needs (%)	Not Interested (%)	Participating (%)	Non participating (%)
Bristol Bishopsworth	TravelSmart	28	18	9	45	55	45
Bristol Hartcliffe	TravelSmart	35	21	8	35	65	35
Bristol Bishopston	TravelSmart	43	14	12	31	69	31
Bristol Southville, Bedminster, WH	TravelSmart	55	15	11	19	81	19
Bristol Clifton Gotham	SDG	–	–	–	–	57	43
Bristol Easton	SDG	–	–	–	–	67	33
Darlington Phase 1	SDG	–	–	–	–	59	41
Darlington Phase 2	SDG	–	–	–	–	68	32
Lancashire South Ribble	TravelSmart	49	12	9	30	70	30
Lancashire Skerton, Torrisholme, Bare	TravelSmart	51	15	10	24	76	24
London Kingston	TfL/SDG	–	–	–	–	47	53
London Harringey	TfL/SDG	–	–	–	–	56	44
Nottingham Lady Bay	TravelSmart	49	21	20	10	90	10
Nottingham Meadows	TravelSmart	26	29	31	14	86	14
Peterborough Phase 1	TravelSmart	50	11	10	29	71	29
Peterborough Phase 2	TravelSmart	45	13	10	32	68	32
Peterborough Phase 3	TravelSmart	49	18	9	25	75	25
Worcester Phase 1	TravelSmart	44	14	10	32	68	32
Worcester Phase 2.1	TravelSmart	51	13	12	24	76	24
Worcester Phase 2.2	TravelSmart	56	11	9	24	76	24
Total (average percentage)		45	16	12	27	69	31

Delivery of advice

5.128 Typically PTP advice comprises an information pack (with incentives if required/requested), delivered to the household containing all the requested materials.

5.129 Projects generally collate the information packs at a field office, in accordance with the requirements of each specific household as defined on the service sheet. Experience of field office visits in Peterborough and London conducted as part of this study has demonstrated that they are well managed and efficiently laid out to ensure the right information is inserted in each pack for each household, and that the scheduling of the delivery of packs is managed as the packs are produced (for example by working through the neighbourhood in a logical sequence of streets and house numbers).



Worcester 'Choose How You Move'
Photo courtesy J Bewley/Sustrans

- 5.130 Interestingly, TfL have trialled both internal and outsourced collation of project material, with the most recent projects being undertaken in-house. This is considered (by TfL) as a more sustainable and reliable way of carrying out the task.
- 5.131 The case studies displayed different methods of delivering household information packs, some projects have sent them through the post by Royal Mail, whilst others have delivered them by hand using bike couriers. The use of a bike courier is a particularly appropriate way of promoting the use of sustainable modes and adds credibility and visibility to the project. This method can also allow for personal delivery of a pack straight into the hands of a member of the household, and potentially a travel advisor could discuss issues with a household as they open their pack to encourage, motivate and answer any questions.
- 5.132 Another important factor in the delivery of packs is to personalise the packs by including the name of the person who initially answered the telephone or door. This helps to make people feel that they have been considered individually, that it is their pack with their requested information rather than a standard pack of information materials.
- 5.133 It is also important to issue the packs to people as soon as possible after they have requested information, so the project is still fresh in their memory and people can take advantage of the information. Quick response rates and turnaround times are important at all stages of the PTP process, and information packs should be issued within five days of receipt of a service sheet from a particular household.

Further services

- 5.134 Different further services have been distinguished from the case studies. Projects involving Sustrans/Socialdata offer home visits to households with a particular interest in walking, cycling or public transport. Interestingly, it is at the home visit stage where incentives that involve trialling different modes are typically available, for example the offer of a one-month public transport test ticket in Worcester. Issuing the incentive at this stage helps to ensure that the household in question is serious about changing their travel behaviour, and targets resources effectively. However, the number of these visits has been consistently low (at around 1% of targeted households) and it has meant that few people receive such incentives.
- 5.135 In other projects, for example Brighton, one-day test tickets are given away at stalls or by travel advisors to encourage people to participate, whilst in London TfL offer the pre-loaded Oyster cards to people based on the initial conversation held and the travel advisor's feeling that the household would benefit from the Oyster card.
- 5.136 An interesting approach has been the use of bus drivers to conduct public transport oriented home visits (for example, as employed in Worcester). Bus drivers are well prepared to deal with a whole range of questions that households may have and are considered (by project promoters to date) to be more likely to be trusted and be viewed as a credible source because of experience in the industry. In Perth the project has assembled a bus driver guidance note for undertaking such visits.

- 5.137 Home visits tend to have a low take-up (typically 1% of the targeted households). For households where home visits are conducted, they are generally very well received (as recorded in the satisfaction feedback from participants).
- 5.138 For their 2007 PTP project, Brighton and Hove has made one fundamental development: in addition to offering a PTP package to all residents within the area, 100 people will be selected at the doorstep to form part of an intensive group, who will each receive a unique tailored package of £270 each for whatever they need to get them cycling. Travel advisors work with local cycle retailers and go with the individual cyclist to a local bike shop to offer a continuum of support. A tailored monitoring package, comprising travel diaries, will provide the opportunity to monitor carefully the impact of being part of this intensive group. A bespoke financial monitoring methodology has been developed to monitor resources carefully.
- 5.139 To maintain on-going contact (and commitment), Darlington have launched the Local Motion Club, which people can voluntarily sign up to join. Members benefit from a loyalty card and receive a newsletter every two months. The newsletter is used to launch periodic challenges and invitations to take part in special active travel programmes using the offer of free goodies to encourage participation. An example is the 10,000-steps challenge with a free T-shirt, pedometer and record card for the first 300 people to register. Four thousand people are currently registered. A similar pledge card is offered in Peterborough, using the *good going* brand (originally developed by TfL) to encourage subscription to a sustainable transport lifestyle, to which 1,500 households have subscribed.

Stage 4: Post-project evaluation

- 5.140 To gain an insight into how well the project has achieved its objectives and targets, it is vital to conduct a post-project evaluation exercise. All of the case studies have undertaken, or have plans in place to undertake, a post-project evaluation, with all projects measuring the amount of behavioural change that has taken place (both direct measurements through surveys and indirect measurements using corroborative data).
- 5.141 Post-project evaluation issues are fully dealt with in Chapter 9.

Geographic and population context

The types of places and populations that have the greatest potential

- 5.142 There is no clear definition of how to choose the right area in which to commence a PTP project. The case study sites for which reliable evaluations have been undertaken have demonstrated similar results for car trip reduction across all projects.⁹

⁹ A full spatial analysis of the availability and accessibility of local facilities of each of the project areas has not been possible within this study, although it is considered unlikely that the availability of local facilities will be consistently rich in all areas.

5.143 However, there are certain conditions that are advocated by practitioners and supported by limited overseas project-based analysis. This tends to suggest that areas where there are discrete **self-contained communities** with appropriate **local facilities** lend themselves to PTP projects.¹⁰ This, combined with a **good level of accessibility** (by all sustainable transport modes), and a **local recognition of traffic congestion**, provides a strong platform for the delivery of a successful PTP project.

5.144 The relationship between geographic characteristics and effectiveness of PTP has been formally tested in Perth, Australia. This work centres on an area’s ‘Measure of Transit Oriented Development’, a process of assigning a score to an area for each of the following characteristics:

- permeable – with options for car, bus, train, walk and cycle;
- variety – range of uses/services for a range of people;
- legible – layout is easy for people to understand and orientate themselves;
- robustness – degree to which people can use a given place for different purposes;
- visual appropriateness – extent to which appearance of a place makes people aware of the choices available;
- richness – wide choice of sensory experiences;
- personalisation – extent to which people are able to put their own stamp on a place.

5.145 The outcome of this analysis is summarised in Table 5.10 and demonstrates a correlation (although not a strong one), between areas of high accessibility and PTP effectiveness. From the Perth data, PTP is generally considered to be most effective in inner and middle suburbs where there are good public transport, walking and cycling facilities and many different internal destinations.

Project area	Measure of accessibility	Percentage car trip reduction	Number of car trip reduction (trips per person per year)
Subiaco	+2.6	-12	-80
Fremantle	+1.4	-12	-72
Vincent	+1.4	-9	-57
Melville	+0.6	-12	-94
Marangaroo	-1.2	-4	-26
Armadale	-1.6	-9	-53

¹⁰ UK evidence suggest that in areas with local facilities there may already be high levels of walking, and in areas without facilities there may be a greater potential to encourage use of PT to get to facilities (for example in Bristol Bishopsworth, Bristol Hartcliffe, and Nottingham Lady Bay).

- 5.146 Areas with **strong community networks** assist with getting people involved and creating chatter amongst residents, and ultimately create momentum (findings from Taniguchi and Fujii (2007) reported in the Appendix indicate the impact that can occur when word-of-mouth communication assists the PTP process). This becomes particularly evident across wider geographic programmes (for example, the whole-city effect evidenced in Peterborough), whereby a project can touch those not directly targeted by the intervention through word of mouth and association. Whilst this is desirable in terms of overall project performance, it does have implications on the ability to determine an independent control area for the purposes of evaluation.
- 5.147 It is notable that some of the case study sites particularly target areas of **high car ownership and/ or high car usage**, combined with **good public transport accessibility** and/or a **good walking/cycling network** (i.e. areas where the greatest gap between the use of the car and the availability of alternatives exist). For example, Worcestershire has targeted high car ownership areas towards the suburbs of Worcester city. This approach has also been employed in London, where areas outside central London with higher than average car ownership have been targeted.
- 5.148 A new and emerging work area to select potentially fertile areas for PTP treatment is the use of MOSAIC social area segmentation, ACORN social profiling and/or census based social profiling. Brighton utilises all three methods as well as various GIS mapping solutions observing general accessibility and indices of multiple deprivation across the city. To support the data analysis, site visits were also conducted to get a feel for the different areas, and to identify local facilities and issues such as topography/congestion that can be difficult to get from other sources.
- 5.149 TfL utilise a tool developed by Steer Davies Gleave called Smart Lifestyle Maps. These have been created using the results from a TfL survey showing which types of people in London had a propensity to change their travel habits, in conjunction with MOSAIC social profiling. Smart Lifestyle Maps segment the population into different social profiles with associated lifestyle and travel behaviour characteristics. Whilst there is no firm evidence (to date) that this profiling can increase levels of behavioural change, TfL have identified a number of segments that they target specifically, and have a range of criteria that potential PTP locations are tested against in order to choose a potentially good area. The criteria are:
- a high proportion of targeted smart lifestyle segments (defined as *city life, family focus, detached prosperity and younger minded*);
 - good public transport accessibility level (PTAL) scores;
 - consideration of how the London borough is investing its transport funds;
 - cycling and walking networks, especially good cycling opportunities;
 - discrete self-contained locations away from central London;

- borough officer support and resources if possible;
- consideration of a political balance;
- local political support;
- high awareness levels amongst general public in the borough;
- links with new services and future developments, for example, the Olympics, East London Transit and regeneration areas.

5.150 Another area characteristic that signifies a potentially good area for PTP can be the **levels of environmental awareness**. Residents that already employ green lifestyle choices, such as recycling, may be receptive to travel behaviour change, understanding the detrimental effect that high car usage can contribute to climate change and global warming, as well as the issue of finite resources. This is supported by cognitive dissonance theory, which suggests that people prefer consistency in values, attitudes and behaviour, and highlighting inconsistencies can be used to change people's behaviour. This was one of the main reasons why TfL chose the Borough of Sutton for a PTP programme. Sutton promotes itself as the greenest borough in London, something local residents are aware and proud of, and, as such, TfL feel that the population are the most amenable to PTP. The PTP intervention in Sutton is also part of a wider partnership programme between TfL and the London Borough of Sutton, which combines PTP, school and workplace travel planning. Similarly, the London borough of Camden has aligned its sustainable travel campaign with the active travel health campaign, building bridges between the health promotion and active travel promotion activities.

The importance of transport alternatives – availability, price and capacity

5.151 Areas where there are good, existing sustainable transport networks with spare capacity are strong potential areas for PTP. Participants can be informed of existing infrastructure which they may or may not be overly familiar with, and more information about this infrastructure is likely to induce people to try and use it. Spare capacity is essential, as encouraging people to use an already heavily used bus service, for example, is unlikely to produce a pleasant or practical experience. Practitioners in Melbourne found the existence of this characteristic to be an absolute must when identifying fruitful areas in which to launch PTP (given the high levels of patronage on many PT services across the city).

5.152 Internationally, PTP projects have also been reportedly used to maintain bus usage during periods of rationalisation or price increases and/or to explain the rationale for changes and maintain customer involvement – in the belief that it is potentially not just the most fruitful locations where PTP can be effectively delivered. However within the current UK environment, and in the early stages of PTP developments, it is considered sensible to focus on the areas with most potential. Evidence from the UK (Leeds) suggests that active promotion of bus use during what turned out to be a period of fare increases and indifferent service

had negative impacts on bus use (in the Leeds case it was thought that the negative impacts were associated with the fact that people's attention was being drawn to bus services at an unflattering stage).

- 5.153 There remains some debate amongst practitioners as to whether the existing offer of public transport within the UK is good enough to actively promote PTP in all urban areas. Strong advocates of PTP argue that the baseline data collated as part of the sustainable travel towns research has clearly demonstrated that there is sufficient demand for short local trips, with options already available, for PTP to be deployed in most locations. For each of the sustainable travel towns, the baseline surveys were similar, demonstrating that approximately 40% of current car trips were local, and could, in theory, be undertaken by alternative means through the provision of information and motivation (i.e. PTP), and a further 40% of car trips could be influenced by PTP (i.e. there is a propensity to change), but would also require some network changes. Although this conclusion has been challenged, for example for failing to recognise the complexity of behaviour (e.g. self-identity associated with car for young male drivers, short trips made by car by parents because of very busy schedules), the consistency of results to date from the projects delivered worldwide, suggests that PTP can be effective for areas of the type studied so far irrespective of the sustainable transport offer.
- 5.154 In Darlington, there is a growing acknowledgement among those responsible for delivering the programme that, while it is useful to tie PTP initiatives into infrastructure and service improvements, this is not an absolute requirement. This supports the theory that around half of changes in behaviour relate to personal values and beliefs, rather than external factors. It then follows that those who consider that PTP is only effective on the back of tangible changes in the sustainable travel 'offer', overlook what personal travel planning can do alone. As the Darlington PTP delivery manager put it: 'Change comes from inside people and that often happens in spite of the transport services around them. Clearly, tying an ITM programme to infrastructure and service improvements is a good idea, but a lack of such improvements should not be seen as a reason not to do it.'
- 5.155 PTP can also have a role to play in tackling social exclusion, by targeting households living in areas of deprivation and/or excluded through poor transport networks. For example in Worcester, two of the city wards addressed by the *Choose How You Move* project fall into the top 10% of wards on the index of multiple deprivation, with the PTP component working with those households to understand their particular circumstances and addressing them through a mix of information, motivation and infrastructure improvements. In Darlington, social inclusion issues were influential in the decision to include all households in their PTP programme, irrespective of the fact that this may not have been the most cost-effective approach.

Accompanying improvements to transport alternatives

- 5.156 The launch of new infrastructure or services in an area is identified as a good opportunity to launch PTP (for example, the implementation of new cycle routes or improvements to an existing cycle route or a new bus service). In Worcestershire the first phase of their PTP coincided with the launch of new bus routes through the targeted area, and the second phase coincided with improvements to existing cycling routes.
- 5.157 Amongst their range of criteria, Brighton and Hove employ a slightly different tactic when considering the issue of infrastructure. Employing advice from Cycling England, Brighton and Hove launched PTP in an area that had been the subject of improvements to the cycling and walking network in the previous financial year. This allows the new improvements to bed in for approximately 6–12 months, giving residents time to notice the difference, raise queries and become accustomed to the change. PTP projects then activate or incentivise the population living near to the recently implemented infrastructure/engineering measure.

Population and trip types

- 5.158 In the majority of the case studies examined contextual analysis was carried out to look at factors which could affect the ability of participants to change the mode of transport they use. These included factors such as:
- access to public transport, cycle paths and good footpaths in an area;
 - the road accident rate in the area for pedestrians and residential cyclists (used as a proxy for perceived road safety);
 - age profile of the residents of an area;
 - the household composition for an area;
 - the level of vehicle ownership in the area, and the proportion of people in an area who already use public transport whilst owning a car;
 - economic activity in an area;
 - average distance to work for people living in an area;
 - current modal splits for travel to work for an area.
- 5.159 Table 5.11 summarises *reported change* in trips, by time of day and by gender (including the effect of the control group). The most noticeable trend is for consistently higher reductions in car use by females than males.

Table 5.11: Measured changes in car trips (by time of day, age and gender) attributed to PTP

Project	Approach/service provider	Change in car use (time of day)				Change in car use (by age and gender)		
		AM peak (%)	Off peak (%)	PM peak (%)	Night (%)	20-59 (female) (%)	20-59 (male) (%)	60+ (%)
Bristol Bishopsworth	TravelSmart	-6	-10	-9	-9	-9	-6	-11
Bristol Hartcliffe	TravelSmart	-11	-16	-12	-6	-12	-8	-19
Bristol Bishopston	TravelSmart	-13	-7	-16	-8	-10	-9	-12
Nottingham Lady Bay	TravelSmart	-6	-15	-13	-8	-15	-6	-12
Nottingham Meadows	TravelSmart	-5	-11	-11	-10	-11	-9	-11
Peterborough Phase 1	TravelSmart	-20	-5	-16	-17	-19	-9	7
Overall Average		-10	-11	-13	-10	-13	-8	-12

Note:
Figures include the effect of the control group. Figures are 'as reported' in project evaluation reports, and have not been tested for levels of statistical significance.

5.160 In Nottingham, the increase in public transport use for the Number 30 Pilot has been focused on the off-peak period, where additional capacity is available. This has resulted in a stronger partnership between the scheme promoters and the public transport operators, as any increase in patronage (and farebox) will be achieved without the need for additional vehicles to operate during the peak period.

5.161 Table 5.12 shows the *reported change* in trips by spatial distribution (including the effect of the control group), demonstrating how, based upon the limited reported evidence, the focus of trip change is placed upon an increase in trips within the local suburb (as generally suggested in the evidence arising from the pre-intervention baseline surveys).

Table 5.12: Reported changes in trips (by spatial distribution) attributed to PTP

Project	Approach/service provider	Within own suburb			Within city			External		
		Before	After	% Change	Before	After	% Change	Before	After	% Change
Bristol Bisopsworth and Hartcliffe	TravelSmart	16%	20%	25%	72%	66%	-8%	12%	14%	17%
Bristol Bishopston	TravelSmart	23%	26%	13%	59%	57%	-3%	18%	17%	-6%
Nottingham Lady Bay	TravelSmart	22%	23%	5%	27%	29%	7%	51%	48%	-6%
Nottingham Meadows	TravelSmart	15%	17%	13%	62%	61%	-2%	23%	22%	-4%
Darlington Phase 1	SDG	37%	38%	3%	47%	45%	-4%	16%	17%	6%
Average				12%			-2%			1%

Note:
Figures include the effect of the control group. Figures are 'as reported' in project evaluation reports, and have not been independently tested for levels of statistical significance

The importance of engagement

- 5.162** Engagement forms an important component of any PTP programme, although the level and type of engagement differ for each project and approach. Engagement refers to the personalised element of PTP; actually speaking to somebody, understanding their transport needs, requirements and any barriers (actual or perceived), as well as suggesting information that is relevant to their situation. All practitioners advocate the need for one-to-one dialogue in personal travel planning, although the extent of engagement and the importance placed upon does differ. The tailored information may be viewed as the second element of the personalised nature of the initiative.
- 5.163** An example of the importance of personalisation has been reported in Perth, where research has been conducted into the comparative effectiveness of unsolicited travel advice (for example the issuing of new timetables by a bus operator when a new service is launched) with PTP. Table 5.13 summarises the findings.

Technique	Year	Relative increase public transport *	Additional Revenue (per person per year)**	Cost per Person**	First year rate of return
Dialogue design – personalised (public transport only)	2002 to 2004	+11 to +12%	£7.50–11.70	£7.00–8.80	1.1–1.6
Direct marketing – not personalised (public transport only)	2004	+ 1%	£0.80	£1.70	0.5

Notes:
 Source: Perth PTP, frequently asked questions
 * different areas with different (base) patronage
 ** Adjusted to UK pounds

- 5.164** It is important to note, however, that in Nottingham, the City Council (NCC) have developed what might be described as a ‘less engaging’ model (whether this falls within the definition of PTP is uncertain, as it sits somewhere between PTP and direct marketing), where a smartcard pre-loaded with one free day’s travel has been issued to all residents in the city (May 2007), together with the bus timetable for the nearest bus stop to their house of a recommended bus service that serves the city centre (an automated journey planner approach). This approach does not have the one to one dialogue element to it, but early results suggest it has had a notable impact on public transport use (from the evidence of the initial Number 30 trial) and is considered a cost-effective long-term delivery model for PTP across the city.
- 5.165** NCC have estimated that this approach will yield a 3% increase in PT trips for all residents served by less frequent routes (every 15 minute or worse), and a 0.7% increase in trips for those served by high-frequency routes (based upon the trial of the approach on the Number 30 route in 2006, which showed an overall increase in patronage of 5.5%). This would result in an increase in PT trips of over 1 million each year, and, over a 10 year period, the project would therefore amount to a subsidy of

£0.08 per trip generated. Whilst it is too early to measure the impact at the time of writing (May 2007), over 30,000 cards have been used and over 500 subsequently topped up with further travel by the resident. Over 5,000 residents have registered online – making it much cheaper to carry out subsequent promotions.

- 5.166 The Perth projects have considered the issue of engagement carefully, with the following a summary of the issues raised by the project team.
- 5.167 *When combined with regulations, enforcement and community based programmes, broad reach media have been an effective component of behavioural change programmes (for example in the areas of smoking and road safety), although the UK Making Smarter Choices Work study identified debate regarding the relative contributions of the media and regulatory aspects of these behaviour changes.*
- 5.168 *The ‘smarter choices’ agenda in the UK is less focused upon regulation, and hence it is uncertain whether broad reach media can on their own ever be considered effective. The UK Government invested almost £20 million in the Do Your Bit campaign, which addressed travel behaviour in the context of media marketing exercises and incentives for sustainability behaviours affecting climate change. The evaluation of this campaign found that ‘there had only been small changes in consumer attitudes or behaviour’. The report recommended that future campaigns be modified to: overcome barriers, reinforce activity at a local level and reward consumers. The report concluded that ‘advertising by itself is unlikely to be effective’.*
- 5.169 *The European Commission DGVII project INPHORMM (1995–1998) reviewed over 120 campaigns in Europe and investigated the impacts of transport information, publicity and marketing in changing travel attitudes and behaviour to reduce car use and encourage cycling, walking and the use of public transport. The findings of this study suggest that, whilst mass media campaigns are inappropriate methods on their own to introduce new travel ideas or explain new policies or measures, they can act as a trigger to encourage one-off or short-term behaviour change (such as a reminder to participate in a car-free day), but have little effect on long-term behaviour changes.*

The importance of scale of activity

- 5.170 Scale is an important factor in the strategic success of PTP. Delivering a programme across an entire city has a number of advantages:
- it creates a momentum and word-of-mouth phenomenon, which strengthens the outcomes;
 - it provides a visible message to the population (in terms of promotional goods, for example shopping bags, and the teams of advisors on street);
 - it enables corroborative data to be used to test the outcomes (as the impacts should be identified on walk, cycle and public transport networks across the city).

- 5.171 There is also an important relationship between scale of activity and project timescales. It is interesting to compare, for example, the city-wide approach adopted in Peterborough (every other household targeted across the city, 25,000 in total, undertaken over a four-year period), with Brisbane, where 180,000 people have been targeted over an intensive six-month period. Clearly the logistics, management and costs associated with the latter approach are significant, but do create a wave of momentum simply not possible when either smaller projects are delivered and/or city-wide projects are delivered over longer time periods. PTP practitioners are generally of the view that large-scale projects can create momentum and chatter amongst a community, which in turn can benefit the project by raising interest levels that can help to increase contact and participation rates.
- 5.172 The UK STTs are choosing to undertake their PTP programmes in stages and target approximately the same number of households at each stage. In Worcester and Peterborough, the targeted number of households is approximately 6,500 at the different stages, whilst in Darlington at each stage the targeted number of households is between 12,000 and 14,500. This method has practical advantages, for example the stock order numbers and the number of travel advisors needed are likely to stay approximately the same for each stage of the study.
- 5.173 The direction in which a project is conducted can create waves of interest. In Sutton, the project has started in the north-west corner of the borough and the travel advisors are gradually working their way through the neighbourhoods. As the travel advisors are quite visible, with branded uniforms (to be discussed in a later section), they have been noticed and people have asked them what they are doing. People often ask them when they will be coming to their area. This interaction, together with any publicity that has taken place, helps to create word of mouth, and word of mouth is a highly successful tool in getting the message 'out into the community'.
- 5.174 Larger-scale projects also create a hive of media activity, for example in Sutton, where in 2007, 70,000 households are being targeted, local and national newspaper and television stations have reported the scheme. This level of publicity has helped to raise recognition of the project, again potentially assisting with increased participation rates. Within the UK there has not been a project to match the scale and intensity of some of the large-scale Australian projects.
- 5.175 There are some concerns raised by practitioners surrounding very intensive PTP projects (i.e. investing significantly in a small number of households), and/or small scale pilots, as it is uncertain as to whether such approaches can be rolled out cost-effectively as large-scale programmes. This may account for the move away from more intensive approaches to the current approaches. Further evidence should be sought as to whether less-intensive PTP projects (involving more participants) achieve larger behavioural change impacts than intensive projects (involving fewer participants but potentially larger individual-level change) for the same-cost resource.

Supporting area-wide publicity campaigns

5.176 Case study sites have deployed a range of tools to strengthen their PTP messages, including:

- radio and TV interviews and adverts;
- roadside billboards;
- bus shelter posters;
- community posters, roadshows and events;
- pre-intervention letter.



Brighton billboards. Photo courtesy of Brighton and Hove City Council

5.177 There is also a strong willingness amongst the case study sites to use trusted community sources to distil knowledge about the PTP programme, using community leaders to inform about a forthcoming programme, or, in the case of Merseyside, to actually deliver the PTP project to the local community.

5.178 The wider publicity programmes associated with PTP need to be carefully considered when identifying a suitable control group for evaluation purposes (i.e. to ensure they are not influenced by the intervention).

Political support

5.179 PTP studies are generally favourably received by local politicians, because they create strong positive feedback within local communities (as evidenced by the ‘quotes of the day’ reported by Sustrans/Socialdata for all of their projects). In order to engage support, it is vital to keep elected members fully briefed on all stages of the project, such that they are informed of the community activity and can respond appropriately to any issues emerging. The extensive nature of PTP can make this difficult, as a particular project will cover several different constituent areas, and hence successful projects have undertaken elected member briefings throughout the lifetime of the project. Hosted visit to call centres and/or field offices is a proven technique for capturing the enthusiasm of local politicians, as they see first hand the activity and interaction associated with PTP delivery teams.

Links to wider policy areas

5.180 PTP provides outcomes which are directly relevant beyond transport, most notably in the health, environment, economic development and planning sectors. In Victoria, Australia, a number of economic, environmental and social policy goals have been evaluated through the TravelSMART key performance indicators. These are summarised in Table 5.14.

Table 5.14: Key performance indicators (Melbourne PTP)

Triple bottom line	Policy goal	TravelSmart Key Performance Indicator
Economic	<ul style="list-style-type: none"> Managing demand for investment in urban road infrastructure Accommodating growth in urban freight movement (especially light commercial vehicle movement) 	<ul style="list-style-type: none"> Reducing growth in private vehicle kilometres travelled (VKT) in congested conditions
	<ul style="list-style-type: none"> Managing subsidy of PT 	<ul style="list-style-type: none"> Increasing public transport (PT) patronage (especially off peak)
Environment	<ul style="list-style-type: none"> Reduced greenhouse gas production 	<ul style="list-style-type: none"> Reducing growth in total private VKT (peak and off peak)
	<ul style="list-style-type: none"> Reduced air pollution 	<ul style="list-style-type: none"> Reducing growth in private VKT in congested conditions and short trips
Social	<ul style="list-style-type: none"> Reduced impact of obesity related health issues 	<ul style="list-style-type: none"> Increasing physical activity – through active transport modes of cycling and walking
	<ul style="list-style-type: none"> Social connectedness Personnel safety (actual and perceived) 	<ul style="list-style-type: none"> More people in the ‘public realm’ – on PT/at PT stops, walking and cycling in their local areas

5.181 In Melbourne, the policy objectives link to the city’s integrated transport and land-use strategy (Melbourne 2030) and have been developed to mitigate anticipated growth in the city’s population by almost one-third over the next 25 years. Increasing pressure on the transport infrastructure means that traffic congestion is already recognised as an issue and the main contributor to this has been private car trips made during peak periods. The overarching target for the strategy is to grow the use of public transport trips to 20% of all motorised trips by 2020 (currently 9%). Working alongside improvements to transport infrastructure and services, the PTP programme is expected to make a key contribution to this, and is also designed to support the Victorian greenhouse strategy and obesity reduction, particularly in children, through contact with schools and workplaces.

Summary

- Evaluations of PTP consistently report benefits in terms of a reduction in vehicle kilometres travelled, combined with associated community benefits.
- PTP can be applied to any community.
- Practitioners generally agree that the greatest success is likely to be delivered where:
 - PTP is combined with a wider sustainable transport investment programme;
 - there are discrete self contained communities with appropriate local facilities, good community networks;
 - there are good levels of accessibility (by all sustainable transport modes), combined with excess capacity on the public transport system, and a local recognition of the problems associated with traffic congestion;
 - there is a stable (not transient) community.
- The effectiveness of PTP is enhanced where:
 - scale is increased;
 - a proven technique is used;
 - effective project management is deployed;
 - staff are committed and motivated to the objectives of the PTP project;
 - the project is led by a strong advocate, with commitment and enthusiasm.

6 Objective 2: Barriers (and solutions)

- 6.1 Whilst there are many successful elements of PTP projects to date, there have been a number of barriers to overcome, some of which still present problems, and some that may present problems in the future.
- 6.2 In the academic literature surrounding PTP, there are some common themes emerging which are worthy of consideration. In particular, Seethaler and Rose identify the following key barriers to successful travel behaviour change projects:
- **external barriers:** Economic constraints, low quality of alternative public transport, long commuting distances;
 - **internal barriers:** Perceptions of alternatives to the car, negative attitudes towards public transport, unawareness of benefits resulting from sustainable behaviour; and
 - **the habitual nature of the decision-making process** underlying travel behaviour patterns.
- 6.3 Internal barriers are cited as the toughest to change, because they are personal to the individual and reflect the particular view of the individual when making a decision about travel behaviour. While there are common benefits (e.g. less pollution and traffic congestion) to choosing not to travel by car, these are often overlooked because of the self-interest of the person making the decision.
- 6.4 The following provides a general commentary against each of the issues arising from the case studies undertaken for the study.

Scepticism

- 6.5 One of the key barriers to the implementation of PTP projects is scepticism, doubts about whether PTP really does work, and whether the reported results are robust. This is inevitable in a process of behavioural change, where the outcomes are difficult to visualise (particularly for small-scale pilot projects), and where the impacts can be potentially diluted by a whole range of external factors across the transport network.
- 6.6 One of the prime causes of the scepticism has been the debate surrounding the statistical validity of reported results and the nature of the evaluation processes adopted. This is discussed further in Chapters 5 and 9. Scepticism is further compounded by the perception of high cost.
- 6.7 Scepticism is also derived from discrepancies associated with the philosophical beliefs of transport economists – i.e. whether they believe that attitudes and behaviour can be changed by components other than pricing mechanisms and/or the physical status of the transport network.

Solution to barrier: Scepticism

- 6.8 The obvious solution to the issue of scepticism is to counter the evaluation concerns about PTP and previous reported results and/or produce new defensible evidence on the effectiveness of the PTP approach.
- 6.9 At the local level this requires strong leadership and a full belief and understanding of the evaluation process embedded within each project, and for those projects to ‘stand up’ and widely promote the outcomes such that this can provide confidence to future projects. Given that the evaluation process has generally been the area of greatest scrutiny (and some limited debate has arisen over the validity of some reported findings), this will require particularly strong confidence in the outcomes, in order to ensure PTP can stake its claim against other transport measures.
- 6.10 The work of the University of Leeds in independently auditing the Darlington and Peterborough evaluations will be particularly important in this context, as was the work of the Greenhouse Office in Australia and the independent audits of the Perth projects – which themselves have enabled regional governments in Australia to move forward with confidence and increased investment. The review of the evaluation procedures within this study report (Chapter 9) provides further evidence on the robustness of previous evaluations and will provide an important additional evidence base for UK local authorities seeking to deliver PTP.
- 6.11 The evaluation processes within any PTP are complex, demanding an understanding of a complex pattern of trip-making within both the target and control groups. This has inevitably come at a cost, which has restricted some of the early projects in their ability to produce strong cost–benefit analysis. Reducing the evaluation burden would provide a stronger investment profile (as less money would be spent on the costly evaluation components), but can only occur once initial confidence has been gained.

Lack of political support

- 6.12 Because PTP is a new policy area in the UK, it is seen as unfamiliar territory for most local politicians and, therefore, can be seen in their eyes as a potential risk. Despite being included with the DfT’s ‘smarter choices’ suite of measures, it remains a relatively new tool, with limited case studies delivered in the UK to date. Local politicians may not appreciate the potential positive outcomes of PTP, and therefore the funding for an approach that has not been done before (in ‘their area’) can be difficult to secure (combined with the issue of scepticism discussed above).

Solution to barrier: Lack of political support

- 6.13 Political support is best achieved through a better understanding of the PTP process amongst local authority officers, and the outcomes achieved from typical projects, such that they can provide a well-reasoned case for elected members to consider. Greater understanding of the business case and cost-benefit will provide tangible evidence of the outcomes of PTP. Briefing sessions for elected members should allow the opportunity for queries, questions or reservations that the receiving groups may harbour. It is also worth stressing the broader benefits that PTP brings – the ‘quotes of the day’ from previous studies, and the direct link between the transport strategy and the local populations. In the experience of this study, local people (and hence local politicians) are generally very supportive of PTP once they have undertaken a local project.

Lack of funding

- 6.14 Funding a PTP project is a large barrier to the implementation of PTP. Interviews held with failed STT local authority bidders found that not one had gone on to implement a major scheme of this nature, and the main reason was funding. In particular, a key barrier is the lack of revenue funding, and the perception that funding for PTP cannot therefore be delivered through conventional LTP funds.
- 6.15 Another problem associated with funding is making the most of the money that is available, i.e. ensuring cost-effectiveness of any monetary outlay, as to date there is little collective experience of what constitutes a cost-effective project process (discussed in Chapter 5).

Solution to barrier: Lack of funding

- 6.16 The case studies have demonstrated that long-term programmes can be funded. The key issue is to create a viable business case that demonstrates the cost-effectiveness of the proposed PTP project, and how it supports, enhances, and in some occasions competes with, other transport projects. There is also evidence that PTP is more likely to secure funding if it is embedded within a larger project of which PTP is just one element, for example the PTP project in Lancashire is just one element of 26 measures that form the CIVITAS-funded programme promoting more sustainable travel patterns in the county.
- 6.17 There is also evidence of the use of revenue and LTP funds to fund PTP projects. Brighton and Hove were originally planning to run a PTP project before they were awarded the Cycling Demonstration Town status. For the initial project they were planning on using revenue funds (decriminalised parking) and some LTP funding. In order to continue their PTP programme on an annual basis, Bristol has allocated approximately £70,000 of its capital programme (comprising both LTP and council resources) to an on-going programme of PTP projects across the city.

- 6.18 The best way to ensure cost-effectiveness (of the project process) is to produce a comprehensive and secure funding plan and project plan with realistic allocations of money to certain tasks. This helps to minimise the risk of cost over-runs (by identifying risk for each stage of the process from the outset) and ensures that money is well spent.

Risk of failure

- 6.19 The risk of failure is a pertinent issue surrounding PTP projects. The potential lack of interest of the targeted households and the potential lack of travel behaviour change are primary concerns of PTP project managers. Stakeholders may wish to see a measurable, positive outcome of a project and require a certain degree of success to justify the costs of this as well as further projects.

Solution to barrier: Risk of failure

- 6.20 This can be overcome by planning the project as precisely as possible – for example, initially tackling the most fertile areas, adopting a proven technique, being able to offer suitable alternative sustainable transport, using a successful contact strategy, providing the right materials and incentives, and having a robust evaluation process in place. Thought needs to be applied to all of the issues raised in Chapter 5, which set out the successful components of previous PTP projects.

Inadequate scale

- 6.21 The scale of a project can impact on many other areas of a project. If it is too small, then the benefits may be deemed as imperceptible, non-replicable at the larger scale, and/or of little value. Large-scale projects can (be seen to) have large costs attached to them (even though the cost per participant is reduced through economies of scale).

Solution to barrier: Inadequate scale

- 6.22 Evidence from Australia illustrates the now commonplace approach of large-scale projects, for example the targeting of 45,000 households plus at the same time in Melbourne, Brisbane and Perth. UK projects are not at the same level of maturity as Australian projects, but the full UK projects that have been investigated have targeted between approximately 6,000 and 30,000 households at a time, with the exception of TfL, which has launched the largest-scale UK project in the summer of 2007, targeting 70,000 households (the entire Borough of Sutton). Positive benefits of large-scale projects are described in Chapter 5, and it is recommended that future implementations focus on larger-scale projects to maximise the cost-effectiveness of the approach.

Lack of interest among targeted audience

- 6.23 This is slightly different from ‘risk of failure’ and relates to the role of the travel advisor. Upon approaching the public, either by phone or on their doorstep, travel advisors from all projects have reported a degree of apathy (on various scales) towards the PTP project (in addition to strong positive feedback from those engaged with the process).
- 6.24 The ability to make contact with a specifically targeted audience that has the propensity to change is also identified as a specific problem. Lifestyle characteristics of the social groups may mean they are often out of the house and so, despite their potential for participation, they may end up not participating (because of being unavailable).

Solution to the barrier: Lack of interest amongst targeted audience

- 6.25 In order to overcome the issue of apathy, a general approach taken by travel advisors is to enquire about all members of the family, for example children in the house or extended family living within the households. A good knowledge of services and transport in the area can help the travel advisors to make a breakthrough.
- 6.26 Travel advisors in Sutton are trained in the skills necessary to challenge (sympathetically) those residents who express no interest in the project, enquiring as to why they are not interested. A non-accusatory but assertive manner is required to perform this task, but the end result could be the participation of a person or, at worst, qualitative feedback about the lack of interest, which may help to inform future projects.
- 6.27 Making contact with the ‘right’ people (people who are amenable to change) can be enhanced through persistency of contact (trying each household between 3 and 10 times, depending on method of contact, before a general participation letter and service sheet is distributed). However, this can only be followed to a point, as this practice will start to become cost-ineffective and tends to be more appropriate where the contact is made by telephone. Leaving ‘we missed you’ cards at targeted households is also a way to try to make contact, in the hope that the occupant will want to participate.

PTP fatigue

- 6.28 A risk identified by TfL is the worry that the public will lose interest in hearing about sustainable transport from a range of sources and their apathy levels will increase. This is particularly pertinent in Sutton, where, in the 2006/07 financial year, a small-scale initiative was implemented, whilst in 2007/08 the whole of the borough is being targeted. At the same time, employer and school travel planning initiatives are being launched.

Solution to barrier: PTP fatigue

6.29 Well-managed PTP programmes must integrate with other sustainable transport programmes seeking to enhance the overall offer to the public. In particular, PTP should seek to support sustainable transport infrastructure projects (for example, new bus showcase corridors or cycle routes) and should complement other components of the ‘smarter choices’ strategy. For example, in Brisbane the ‘rush hour’ is targeted through employer travel planning, the school run through school travel plans, and the off-peak period through PTP. A single team managing all of these components ensures that consistent and complementary measures are delivered.

Poor project branding/identity

6.30 A lack of project branding can prove to be a barrier in reaching the general public, engaging with them and gaining their support. There is nothing for the community to recognise, let alone identify with and become part of. Similarly the use of the local authority name and/logo can prove to be a barrier, if the local authority is viewed as ‘telling people what they should do’, or if there are any wider historic issues affecting the perception of the local authority.

Solution to barrier: Poor project branding/identity

6.31 For most large-scale projects, marketing agencies have been appointed to develop a project brand that is applied to all stages of the PTP process. For example, Darlington had to go through a re-branding exercise for their STT project after the first year, as the first slogan ‘a town on the move’ was not working in capturing the people’s imagination. The measured reductions in car driver trips for the target population were 3% in Phase 1 and 11% in Phase 2, indicating that this change in branding may have assisted in increasing effectiveness of PTP. In Darlington the marketing agency also advised the council to remove its name from all of the literature and replace it with the new project name ‘Local Motion’. This removal of a local authority name/logo, for example, can also apply to the travel advisor role when they are introducing the PTP project to households.

6.32 Interestingly, in Australia all of the state governments have adopted a common identity for the suite of ‘smarter choices’ measures promoted within their authority area, known as TravelSmart.¹¹ This brand is issued under licence by the Western Australia state government. Within the TravelSmart brand, regional government have some flexibility in creating local identities and programmes, although they must ensure a pre-determined quality standard for all TravelSmart-related projects if they are to be given on-going permission to continue to use the licence (maintaining a national quality element to the TravelSmart brand).

11 The use of the TravelSmart brand differs between Australia and the UK. In Australia it describes a whole range of behaviour change programmes focusing on employers, schools etc., as well as communities, while in the UK it is registered as a trade mark by Sustrans to identify PTP projects delivered with Socialdata using the IndiMark approach.

Contact barriers

- 6.33 An increasing number of the general public are signing up to the Telephone Preference Service, meaning that they are non-contactable for PTP projects where the preferred method of contact is by telephone.

Solution to barrier: Contact barriers

- 6.34 Increased sign-up to the Telephone Preference Service can be overcome by supporting the telephone contact approach with 'in-fill' door knocking, or adopting an entirely door knocking approach. However one of the case study sites raised the issue that door-to-door contact may also be ruled out in the future for various reasons. One suggested alternative is the use of e-mail. However, this method of contact presents a whole new set of barriers, not least that it gives potential participants a good opportunity to walk away without engaging in any personal dialogue. E-mail is not a suitable medium for initial contact and could only be seen as a means of continuing dialogue in future years.

Lack of engagement

- 6.35 One other contact issue is the amount of personal dialogue that is undertaken between a travel advisor and participants. The personalised nature of the dialogue is seen to be one of the most important elements of the whole process, as travel advisors discuss an individual's travel needs, requirements and options.

Solution to barrier: Lack of engagement

- 6.36 Evidence from Australia shows that continued dialogue, along with motivation and encouragement, helps to engage more with residents and potentially secures a greater level of travel behaviour change. UK case studies have tried to maintain contact with participants by setting up 'travel clubs' for people to join. PTP delivery teams can then keep in contact with participants via e-mail, newsletter, mail shot etc., continuing the messages of encouragement and motivation.

Poor first impressions of travel advisors

- 6.37 Travel advisors contacting households on doorsteps can face a problem legitimising their position and their purpose. Door-to-door contact is often associated with 'double-glazing sales' and therefore is not always particularly well received.

Solution to barrier: Poor first impressions of travel advisors

- 6.38 This negative perception can be overcome by the travel advisor clearly stating the purpose of their visit at the start of the conversation with an appealing but assertive manner (stressing the 'no sale' element to the discussion). Working in groups across communities helps to reinforce the corporate nature of the message, as does the use of common uniforms, name badges and access by foot or cycle.

Lack of staff continuity and recruiting enough staff

- 6.39 There is evidence to show that discontinuity of staff can mean a project may not be as successful as it could have been. Local authority staff working in the PTP market have specialised skills and can be hard to find, and then to replace. Another staffing concern relates to the temporary fieldworkers recruited, as these form the public face of much of the PTP activity – in essence, despite being carefully picked, they are an unknown quantity.
- 6.40 The number of staff can also be a risk to a project, as a shortage may cause unforeseen delays. A lack of staff to compile household information packs may mean that travel advisors have to help out, which in turn means that the travel advisors may fall behind with contacting households.

Solution to barrier: Lack of staff continuity and recruiting enough staff

- 6.41 Local authority staff should remain flexible when drawing up appropriate contracts for the staff involved, potentially involving them with other longer-term aspects of the sustainable transport strategy. The use of a consultancy partner to recruit temporary staff to deliver the PTP programme can also overcome the staffing barrier.

Negative media

- 6.42 The media can be both an ally and an enemy, able either to present a strong positive story, or turn good news into bad.

Solution to the barrier: Negative media

- 6.43 The best way to avoid this is to be open with the press and sell all of the positive aspects of the scheme, namely the voluntary nature of participation, the offer of free personalised advice, and clearly articulate any validated evaluation findings. Press should be given regular briefings on progress, and a consistent and available contact point within the PTP team should be promoted to all local press.
- 6.44 Overcoming a bad story that has already been published is more difficult. A common response is to attempt to counter the bad story with a good one, featuring a participant who has embraced the project and has changed their travel behaviour, or coverage of a specific project-related event. It may even be that members of the public write in to a local newspaper praising the project and related promotional material (as has happened in Brighton and Hove).

Inadequate recording procedures

- 6.45 PTP projects contain and gather a huge amount of data, with a clear potential for either corruption or accidental mismanagement.

Solution to barrier: Inadequate recording procedures

- 6.46 All projects must be established on the back of strong internal management procedures, set up and tested from the outset. Data should be stored securely, and backed-up regularly, utilising database management systems to record and manage the flow of information. Random checks on the management of information should be undertaken throughout the project, and any identified concern (particularly raised by the public) should be addressed immediately. In the fast-paced nature of a call centre or field office, often ‘old fashioned’ paper-based systems can be effective – for example, the use of colour coding to determine the delivery packs for different days of the week, different streets and/or different information types. Whilst containing volumes of information, a field office should still present itself as an orderly and well-managed site.

Lack of adequate information materials and incentives

- 6.47 Undertaking an audit of information materials and literature that is already available is time-consuming and requires a significant effort.
- 6.48 The production of bus-stop-specific timetables is particularly time-consuming and resource-intensive. In addition, because of the changeable nature of bus timetables and services, printed information often becomes out of date in a relatively short time. Reproducing and reprinting the new services is resource-intensive and incurs additional assembly and printing costs.

- 6.49 Case studies have suffered from not having enough copies of leaflets and/or not having them printed in time for the PTP roll-outs. Miscalculations such as these can incur delays to the projects, and therefore risk losing momentum and reputation, and making the process less cost-effective than it might otherwise have been.



Example of PTP materials, London

- 6.50 Providing the ‘wrong’ or irrelevant incentives sends out a strong negative message of the PTP project.

Solution to the barrier: Lack of adequate information and incentives

- 6.51 At some case study sites, the simplest and most effective way of tackling the issue of the bus-stop timetables was to replace them with a city-wide bus service map. The latter is less costly and time-consuming to alter when services are changed (although where bus-stop-specific timetables are issued, they remain one of the most popular and effective information tools). In Nottingham, the authority has invested in a supporting bus timetable database system (TRIP TIMES), which provides

real-time bus timetables for each stop on the network. This enables bus-stop-specific timetables to be produced quickly, easily and cheaply, as well as providing important information for other functions within the council. It is worth considering these issues well in advance of a PTP project – establishing an appropriate infrastructure for public transport information that can be plugged into by the PTP project.

- 6.52 Another way to overcome the changeable nature of transport services, especially public transport services, is to provide participants with a small card that tells them where to phone or a website where further information and information regarding changes can be found. This helps to future-proof the materials by giving people a reference point for further use. The potential role of Transport Direct (www.transportdirect.info) in informing the future delivery of PTP information services should be carefully considered.
- 6.53 The incurring of further costs through reprinting of materials that have run out can be overcome by carefully planning printing timetables and thoroughly checking the quantity of each material required. Oversupplies can always be used at community events or distributed to libraries, community facilities etc. An estimate of the likely requirements for information and incentives (based upon the evidence gathered from the UK case studies) is shown in Tables 5.6 and 5.7.
- 6.54 The choice of incentives to be marketed can be informed by brief research into incentives used in other projects to gain an idea of what will and won't work. A PTP delivery team also needs to be flexible in what they offer to targeted households and be willing to change an incentive if it does not work. For example, in their first year, Brighton and Hove offered a discounted voucher for cycle purchases. Usage of the voucher was low and Brighton concluded that this was because many people already have bikes. The next year the discounted voucher was changed to apply to cycle accessories to enable people to enhance their cycling experience.
- 6.55 Future projects may need to consider their method of delivery of information materials, as more local authorities would like to explore new ways of disseminating information, mainly via e-technology. Local authority project managers have commented that the printed materials are 'wasteful of paper' – however, others hold the view that using hard copies of information is a proven methodology. Also they hold the view that people are more responsive to personal contact and having something tangible in their hand rather than being bombarded with electronic information that requires action on their part.

Coincidence with the introduction of new infrastructure or services

- 6.56 Despite new infrastructure being a potential trigger for launching PTP projects, some case studies have experienced difficulty with this approach. The launch of a PTP project and a new bus service, for example, can be a huge strain on human resources, particularly where

staff are new or inexperienced. The launch of a new bus service can create confusion among a population and, coupled with the launch of a PTP project, can increase this confusion – brands and principles can easily become diluted.

Solution to the barrier: Coincidence with the introduction of new infrastructure or services

- 6.57 The best way to mitigate confusion amongst a population is with excellent marketing. For example, in Worcester the new bus services were clearly branded and marketed as ‘Project Express’, and the PTP project which promoted the services (as well as walking, cycling and car share) as ‘Choose How You Move’. Keeping these brand identities was a conscious decision and ensured that any negative feedback from one programme would not adversely affect the other.
- 6.58 It has also been noted that new services need time to bed in and for people to become accustomed to them, possibly before they are the subject of a marketing campaign to encourage people to use them.

Poor quality of existing infrastructure

- 6.59 The launch of a PTP project in an area where the sustainable transport offer is less than desirable, for example an unfriendly street scene or a busy road, can sometimes prevent participants from changing their behaviour, because of their own perceptions or perhaps health and safety issues. If there is not a good quality bus service or network of walking/cycling routes in the area, then people are less likely to be motivated by PTP.

Solution to barrier: Poor quality of existing infrastructure

- 6.60 Chapter 5 highlighted that the outcomes of PTP tend to be consistent across all project areas, thus suggesting that this is a perceived barrier, rather than an actual one. The background research for the STTs has shown that, consistent with other worldwide studies, people’s views of the alternatives and the realities of the sustainable transport networks are often very different (for example, in Worcester respondents to the baseline survey significantly overstated the actual time of bus journeys and by a similar margin underestimated the actual journey time by car for regular journeys).

Difficulty in achieving home visits

- 6.61 Home visits, despite offering the purest type of PTP (direct engagement), have generally not been extensively taken up within the UK case studies (although, for those that do, they tend to receive a high degree of satisfaction). This may be because people do not want to be pressured (perceived pressure) in their own home, or they simply do not want to invite a stranger into their home, or perhaps they are not interested in fully engaging in the project to the highest level, or they may feel that the information and motivation are good enough for them to change behaviour.

- 6.62 The use of bus drivers to conduct public transport oriented home visits is considered to be a good idea in principle and works well. However, the sacrifice of trained bus drivers can impact upon the bus company and services.
- 6.63 Another barrier to home visits is finding a time to suit both the households and the travel advisors. Timetabling the visits has been problematic and has been seen by some bus companies as an inefficient use of time.

Solution to barrier: Difficulty in achieving home visits

- 6.64 Possible solutions to this could be 'travel surgeries' or a certain place where people can go if they require any further specific advice or information. However, it is important to note that, where PTP project offices have been 'open access' (and the public encouraged to visit), there has been little uptake, and hence it is only likely to be successful if linked to other activities (for example the travel cafés concept developed by Brisbane), and linked to a strong sustainable transport culture.
- 6.65 To ameliorate the situation regarding the use of bus drivers, First in Worcester have withdrawn their current drivers from making home visits and have replaced them with ex-drivers.

Lack of transparent data analysis

- 6.66 There is a need for data to be accessible by the main organisations involved in a project, i.e. the local authority and consultancy partner. In essence, all data should be freely and proactively shared, including access to full evaluation data and household-based information for both control and target groups. Without this free transfer of data, projects run the risk of losing confidence if one party is felt to be privy to particular areas of knowledge and understanding. However, the constraints imposed by the Data Protection Act restrict the ability for all household data to be shared in this way.

Solution to barrier: Lack of transparent data analysis

- 6.67 The most notable way of overcoming the data protection legislation has been to provide anonymised data sets at the end of the evaluation process.
- 6.68 Local authorities have also tackled this issues through a clear, well-defined contract, where necessary negotiated prior to the signing of contracts, enabling the ability to access (some specified) data sets by all parties. Worcester negotiated 50:50 ownership of the intellectual property of their STT project data with their consultancy partner.
- 6.69 The appointment of an independent auditor to the process who works within the data protection codes of conduct and moderates and oversees all data flows within the project provides a further potential option, although to date this has been limited to external checks on the anonymised data after the evaluation is complete.

Inadequate evaluation methodology

6.70 The evaluation methodology is important to PTP projects. Concerns regarding the validity, robustness and reporting of PTP evaluations has potentially restricted the growth of the PTP market.

Solution to barrier: Inadequate evaluation methodology

6.71 Project delivery teams should ensure that they are using a robust and defensible evaluation methodology that considers and employs the appropriate evaluation techniques, sample sizes and is ideally supported with corroborative data. The use of independent evaluations and auditors is worth considering. Further details are reported in Chapter 9.

Limited consultancy competition

6.72 A potential barrier to future PTP projects is the small number of consultancies that specialise in PTP, as this arrangement lowers competition, resulting in less choice for local authorities. This is viewed by local authorities as being an undesirable situation.

Solution to barrier: Limited consultancy competition

6.73 There is no simple solution to the fact there are very few consultancies that specialise in PTP, as those that specialise in the field have been developing their approaches over many years and offer a product which they believe to be the most effective. They have also established procedures and operational requirements (such as field offices and call centres), which make them cost-effective in the bidding process, combined with extensive project experience.

6.74 However, as the PTP market develops in the UK, it is certain that the market will react, expanding the availability of genuine competition for PTP projects. In Australia, two interesting approaches have emerged:

- in Perth, the authority have appointed a PTP panel and, although only one consultancy has been appointed from this panel so far, as future opportunities arise, and testing of different approaches is considered, this may change; and
- in Melbourne, the authority issued a generic PTP process for commercial partners to respond to, and split the project into three different geographic areas, stating that any one consultancy partner could undertake only one geographic area – thus stimulating competition and encouraging others to enter the market.

Summary

As PTP is a relatively new transport strategy tool, there are a number of barriers that have been highlighted, the most important being:

- scepticism;
- lack of understanding;
- lack of political and media acceptance/understanding;
- lack of funding;
- lack of transparent data analysis and evaluation methodology;
- lack of organisational capacity and revenue funding (including budget management) to deliver programmes;
- lack of reasonable-quality alternative means of transport.

Evidence from the large-scale UK projects has demonstrated how all of these barriers can be reduced through rigorous planning, political and media engagement, creative funding models, robust (yet appropriate) evaluation tools and supporting investment in sustainable transport networks.

7 Objective 3: The business case

Context

- 7.1 There is very limited experience of business cases being developed for UK PTP projects. This is primarily related to the fact that the funding has generally been through central government or European Union grant, and whilst this has been provided to local authorities on a competitive basis, it has not demanded the rigour of a full business case (as, for example, might be expected for a major transport scheme bid). All of the projects fall below the typical threshold of £5 million, for which a full business case would typically be required to justify the award of funding for transport schemes.
- 7.2 There is, however, some experience of developing cost–benefit analysis (CBA) of PTP projects, and the issues associated with this are discussed in this chapter.

Cost–benefit analysis: background

- 7.3 The Treasury best practice guide, *Appraisal and Evaluation in Central Government*, (the ‘Green Book’), published in 2003, is used by all central government departments and agencies to appraise and evaluate policies and capital projects. The Green Book recommends that options should be appraised using cost–benefit analysis, with supplementary techniques to be used for weighing up those costs and benefits that remain unvalued. The Treasury defines cost–benefit analysis as ‘*Analysis which quantifies in monetary terms as many of the costs and benefits of a proposal as feasible, including items for which the market does not provide a satisfactory measure of economic value*’. This definition clearly states that both qualitative and quantitative pieces of information are taken into consideration when assessing the value of a project.
- 7.4 The Department for Transport’s New Approach to Appraisal (NATA) (available at www.webtag.org.uk) provides an appraisal framework for transport projects that has cost–benefit analysis embedded within it. Typically used for the assessment of large-scale infrastructure schemes, NATA includes an assessment of the economic performance of a scheme (alongside environment, safety, accessibility and integration impacts). Recent guidance issued on the use of the NATA framework for the evaluation of small-scale walking and cycling schemes (Sustrans, 2006) may well be important to PTP assessments in the future (for example enabling the health benefits associated with measures to promote walking and cycling to be more clearly articulated).
- 7.5 In all cost–benefit analysis, a common unit of measurement must be used when quantifying costs and benefits, the most usual unit being money. The value must be discounted and therefore is usually written as ‘present value at $b\%$ discount’. When valuing benefits, it is important that the values used are not what people think their time/health etc. is worth or what policy evaluators think people’s time/health etc. is worth,

but what people reveal their time/health etc. is worth by the choices they make. A simplistic example: if, through their behaviour, people demonstrated a willingness to spend £5 more to get to work 5 minutes earlier, the value of their time would be £1 per minute.

- 7.6 Externally generated figures for the cost–benefit analysis are updated in line with inflation. In the transport field, particularly for measures aimed at managing demand, many of the project benefits result from reductions in vehicle kilometres travelled (VKT) and it is therefore important that accurate and robust estimates of changes in VKT are made as part of the cost–benefit analysis.
- 7.7 The capability of an organisation to produce an accurate cost–benefit analysis for a proposed transport scheme may have an effect on their ability to generate funding to implement the scheme, and can facilitate comparisons between PTP and other hard and soft transport measures.

Cost–benefit analysis of PTP schemes

- 7.8 Full CBA of PTP was not reported in the *Making Smarter Choices Work* (2004) study. However, cost impact ratios were investigated to provide a method for gauging the impact if the schemes were scaled up. This is a relatively simple way of generating a tangible ‘cost per car kilometre saved’ figure that can be compared with other transport schemes. In the case of the schemes included in the Smarter Choices report, the calculations indicated a cost of between 0.7 and 3.4 pence per vehicle kilometre saved. However, the lower values were predictions for proposed schemes rather than being based on actual performance. In terms of quantifying the benefits in this case, a brief attempt was made to measure the benefit of reduced congestion. This was done using the DfT and Strategic Rail Authority figures regarding shifting sensitive lorry miles from road to rail. These figures can be adapted for car transport, and the resulting cost–benefit ratio for a reduction in congestion was 1:10.
- 7.9 In Australia attempts have been made to produce more detailed cost–benefit analyses for TravelSmart and Travel Blending. A cost–benefit analysis was produced for Travel Blending in Dulwich, a suburb of Adelaide, by Peter Tisato and Tim Robinson in 1999. The data was extrapolated from Dulwich to a larger area of Adelaide to predict the cost–benefit ratio of the project. The benefits quantified in this case included travel time savings, reduced vehicle operating costs, accident cost reductions, network travel time savings, and pollution reduction. The first two were classified as personal savings and the latter three as community savings. Increased fitness from walking and cycling, reduced community severance and utility gained by Travel Blenders by helping a good social cause were thought to be too difficult to quantify.
- 7.10 A more recent attempt at a CBA was made for the TravelSmart project in South Perth, undertaken by Ian Ker, the independent auditor appointed to evaluate the effectiveness of the PTP programme. Congestion was not included in this CBA, but it did include:

- morbidity and mortality improvements from more adequate levels of physical exercise;
- state government benefits in the following areas:
 - public transport fare revenues and operating costs;
 - public transport capital costs;
 - improved health and fitness due to exercise;
 - users’ and others’ exposure to air pollutants;
 - greenhouse gas emissions (financial values not assessed);
 - road capacity requirements;
 - road trauma (financial values not assessed);
 - government tax revenue.

7.11 Overall, the report found a cost–benefit ratio of 1:77 over 25 years and 1:44 over 10 years. It calculated that in the first year of an AUS \$1 million investment programme, the rate of return would be AUS \$490,000 (conservative estimate). The assessment of rate of return in the first year is shown in Table 7.1.

Table 7.1: Perth assessment of first year rate of return	
Component	First year financial savings (AUS \$)
Public transport net fare revenue	170,000
Public transport (bus) capital cost – additional cost	(5,000)
Health service costs (state): improved health and fitness	20,000
Health service costs (state): exposure to air pollution	70,000
Road system costs: traffic signals	65,000
Road system costs: road construction	170,000
Total first-year revenue/cost reduction	490,000
First-year rate of financial return	49%

- 7.12 The authors of the Perth CBA concluded (2002) that ‘the development, implementation, monitoring and evaluation of PTP should be more comprehensively documented in a structured way that allows for continual improvement and updating. This will provide much more effective support for informed decision-making.’

UK PTP projects

- 7.13 Within the UK there is less evidence of comprehensive CBA. In general, more efforts have been placed upon articulating the costs, and then undertaking a basic cost-effectiveness assessment based upon the cost for each vehicle kilometre reduced (to enable some basic comparisons among different approaches to be made). Whilst this is helpful in understanding the cost-effectiveness of different ‘smarter choices’ measures, it does not necessarily enable such measures, particularly deployed extensively over large urban areas, to be accurately compared against more traditional infrastructure-based alternatives.
- 7.14 TfL have analysed their previous projects from a business perspective, resulting in positive and encouraging cost-benefit ratios. The first pilot projects undertaken by TfL were analysed and produced a 1:31 cost-benefit ratio, indicating a strong business case for PTP. It was on the back of these ratios that TfL decided to pursue PTP as a measure to induce travel behaviour change.¹²
- 7.15 Table 7.2 summarises the performance of the PTP case studies examined (where information is available). It is important that this table is read in conjunction with the issues surrounding evaluation in Chapters 5 and 9. The figures assume that basic evaluation costs are included (an annual survey, but excluding any significant baseline or post-project survey) within the total project costs. Total costs exclude local authority staff time (as these were not available for most case studies examined) and the costs associated with printing materials (as an estimate, based upon the limited case studies for which data were available, these excluded costs would increase total project costs by roughly 33%). The figures are calculated for a single year, with the cost of PTP for that year divided by the reduction in vehicle kilometres travelled measured, to determine a cost-effectiveness value. No account has been taken for future year reductions in car use derived from the PTP intervention (as demonstrated in Chapter 10), and hence can be considered a conservative estimate of the level of benefit.

¹² Evidence surrounding the TfL business case has not been examined as part of this study

Table 7.2: Cost-effectiveness of different PTP projects

Project	Approach/ service provider	Targeted households	Estimated total cost	Cost per targeted household	Baseline annual VKT	Change measured		Change attributed to PTP	
						Reduction in VKT	Cost per VKT reduced	Reduction in VKT	Cost per VKT reduced
Brighton year 1	BHC/SDG	10,000	£221,399	£22.14	-	-	-	-	-
Bristol – Bishopsworth	TravelSmart	1192	£42,313*	£35.50	7,482,904	-	-	8%	£0.09
Bristol – Hartcliffe	TravelSmart	1200	£42,313*	£35.26	7911200	-	-	11%	£0.06
Bristol – Bishopston	TravelSmart	2254	£84,800	£37.62	12,978,460	-	-	13%	£0.06
Bristol – Southville, Bedminster, Windmill Hill	TravelSmart	2535	£75,000	£29.59	-	-	-	-	-
Darlington Phase 1	SDG	11470	£326,779*	£28.49	59,998,950	6%	£0.09	-	-
Darlington Phase 2	SDG	10744	£326,779*	£30.42	118,395,200	11%	£0.03	-	-
Nottingham Lady Bay	TravelSmart	353	£51,000*	£144.48	3,200,000	-	-	12%	£0.13
Nottingham Meadows	TravelSmart	538	£51,000*	£94.80	1,800,000	-	-	10%	£0.28
Peterborough Phase 1	TravelSmart	6500	£167,664	£25.79	62,116,560	-	-	15%	£0.02

* Total cost figures split equally between project stages

Project budget allocations

7.16 Table 7.3 shows the breakdown of costs for the relative components of a PTP project (selected based upon the availability of information broken down into component parts).

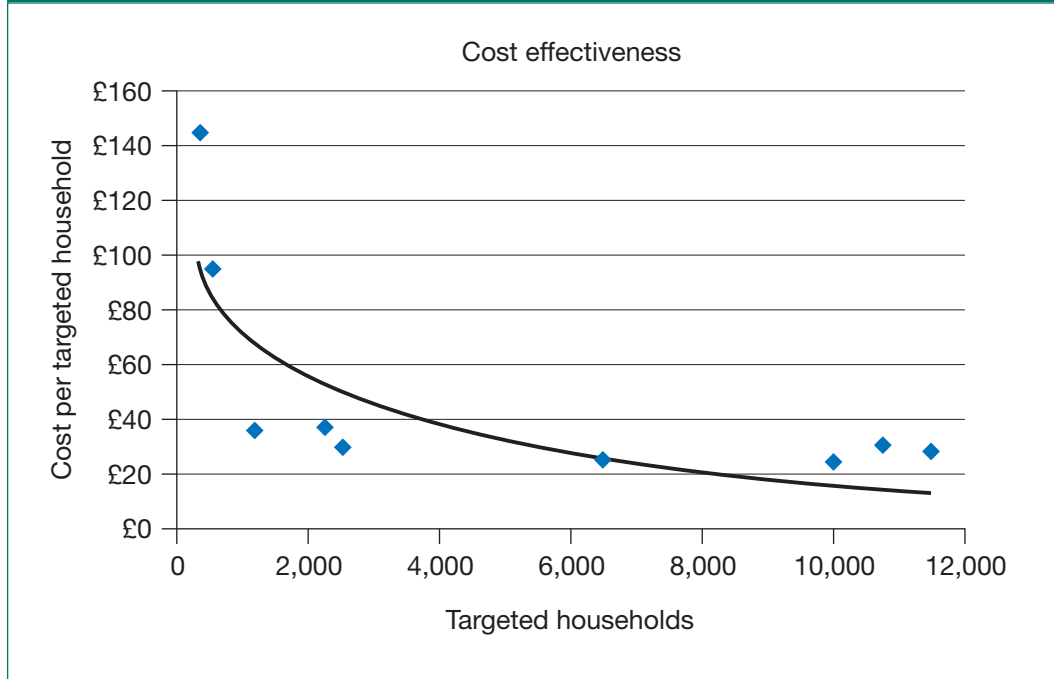
Table 7.3: Example project cost breakdown

Project component	Approximate allocation of budget to component		
	Perth (%)	London (%)	Brighton (%)
Staffing	5	10	21
Publicity and marketing	1	11	7
Information	16	7	9
Incentives	4	4	6
Contact/travel advisors and training	59	43	40
Monitoring/evaluation/research	15	20	15
Other, e.g. stationery, IT, office furniture	–	4	1

Long-term cost-effectiveness – economies of scale

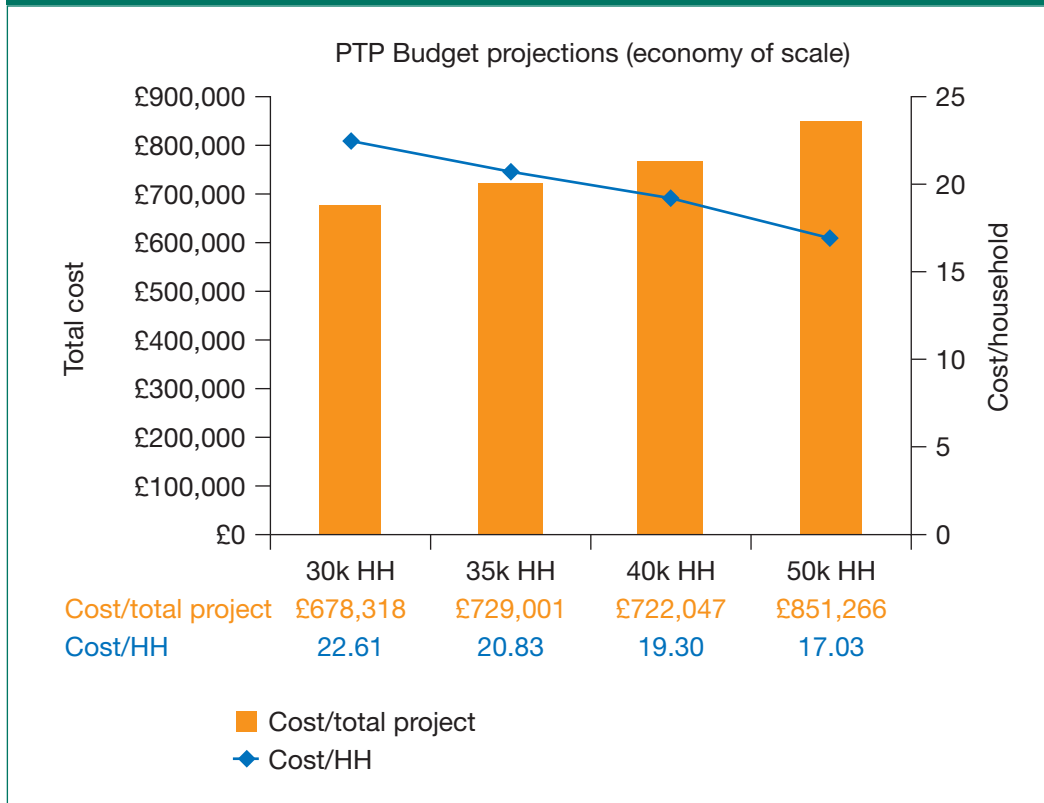
7.17 There is evidence from the case studies examined that the larger the project, the smaller the total cost per household. This is demonstrated on Figure 7.1, which plots the relationships between the total number of households targeted and the cost per household, along with a trend line. This relationship is explained by the upfront costs associated with establishing a project (background materials, project offices, recruitment etc.), and provides further justification for restricting the number of future small-scale projects, which will inherently be more expensive to deliver. Small-scale projects remain important as a means of testing the methodology locally (i.e. establishing a project team and process), but should not be used as a means of justifying the cost-effectiveness of PTP for larger-scale projects.

Figure 7.1: Long-term economies of scale (case studies)



7.19 Supporting this, analyses of recent projects undertaken by TfL during the financial year 2006/07 have demonstrated economies of scale in larger projects, as illustrated in Figure 7.2 (although it should be noted that TfL have also identified that this scale of operations brings with it significant logistical implications for project delivery). Figure 7.2 shows that the greater the number of households targeted and the higher the level of spend, the lower the cost of each participating household is.

Figure 7.2: Long-term economies of scale (Transport for London)



Summary

- There is a growing evidence base on the cost-effectiveness of PTP, drawing upon experience both in the UK and, more extensively, overseas.
- PTP typically costs between £20 and £38 per household, with an equivalent cost of between £0.02 and £0.13 per vehicle kilometre travelled saved.
- Effective cost-benefit analysis takes account of a broad range of impacts (across different sectors) and typically reports positive benefit:cost figures in the order of 30:1.
- There is emerging evidence that cost-effectiveness is improved as the scale of implementation is increased.

8 Objective 4: Funding

Current funding

- 8.1 It is clear that the current emphasis has been upon grant funding and that, whilst this has helped to support PTP projects to date, and stimulate interest and knowledge in PTP techniques, it is generally accepted that this cannot be maintained in the long term. Hence authorities will increasingly seek to identify how PTP schemes can be delivered without significant on-going revenue support.
- 8.2 Table 8.1 illustrates the funding mechanisms of each of the UK case studies.

Table 8.1: Funding mechanisms	
Name of case study	Funding mechanism
Brighton	Primarily Cycling Demonstration Town project funding, topped up with Local Transport Plan (LTP) and internal revenue funding (decriminalised parking)
London	TfL (part of wider 'smarter choices' programme with money ring-fenced from London Congestion Charge scheme)
Nottingham (Meadows and Lady Bay)	2003/04 DfT pilot, match-funded by partner funds including LA and bus operator staff time and resources
Nottingham (CityCard)	LTP capital funds and East Midlands Development Agency/Greater Nottingham Transport Partnership
Bristol (2007)	LTP and internal capital programme – previous studies funded through DfT Grant Support, match funding and EU CIVITAS programme
Darlington	Sustainable Travel Town
Peterborough	Sustainable Travel Town
Worcester	Sustainable Travel Town
Lancashire	CIVITAS (EU) initiative/LTP

- 8.3 A brief commentary on some of the project specific funding issues is presented below.

London

8.4 TfL have been undertaking PTP schemes of varying scales since 2003 and gathered much experience in the field. Over the years, evaluations and cost-benefit analyses of the projects have illustrated a modal shift and value for money respectively, and therefore PTP has been adopted by the Mayor of London as one measure through which to achieve the Mayor's transport strategy. Ring-fenced revenue from the London Congestion Charge scheme is allocated to the 'smarter choices' programme for London, enabling the large-scale PTP projects currently under way to be appropriately funded.

Brighton

8.5 The current funding streams are from the Cycling Demonstration Town (CDT) project and the council's Local Transport Plan (LTP) funds (both revenue and capital). Funds from the council are made up of:

- Revenue from decriminalised parking from 2005/06, carried over to 2006/07;
- £80,000 per annum from LTP2 funding to 2010/11.

8.6 The CDT funding of £1.5 million is awarded in three equal sums over the three-year period to 2008/09, and is match funded by the Council. Officially 2009 is the year of walking and cycling, and during this year approximately 40% of the entire capital budget will be spent on measures to support these modes.

8.7 Brighton and Hove City Council would like to continue the PTP programme after the CDT project has finished. The council is already a member of the European Union's CIVITAS consortium and is hoping to obtain EU funding to take the PTP programme forward. The council is also able to commit approximately £20,000 from LTP2 funding and £80,000 revenue from decriminalised parking enforcement in future years.

Nottingham

8.8 Nottingham undertook a PTP pilot in 2003/04 (with central Government grant support), but could not identify a future funding mechanism on the scale required to deliver a similar programme to other areas of the city. As a result, they have developed a modified PTP programme, combining one-off public transport personal journey plans, with a smartcard (and pre-loaded free ticket), which also combines the functionality of a library card and leisure centre access card.

8.9 The Nottingham Citycard PTP project has been funded through a mixture of LTP capital funds and successful capital and revenue bids to the East Midlands Development Agency and the Greater Nottingham Transport Partnership.

Bristol

8.10 Bristol has undertaken a number of separate PTP projects (each year since 2002). Evaluation results in the first three phases (which were funded by EU grant funding from the CIVITAS programme, and DfT pilot project pump-priming) encouraged LA officers that PTP was worth pursuing. In order to continue their PTP programme on an annual basis, Bristol has allocated approximately £70,000 of its capital programme (comprising both LTP and council resources). Given the results from earlier projects, Bristol has since undertaken a much-reduced evaluation programme that simply provides an indication of improvement, making it more cost-effective per targeted household, as the money is focused primarily on the delivery of PTP (rather than evaluation).

Future funding

8.11 During the case study interview, time was taken to discuss future funding mechanisms, which provided a useful insight into potential alternative funding models. A commentary on the emerging issues is presented below.

Local Transport Plan

8.12 Whilst restricted to capital funding, the LTP spending flexibilities offered to local authorities (in particular those classified as excellent) could provide a potential platform for PTP investment, provided the long-term secured benefits can be proved and sustained. This could, for example, relate to supporting measures such as marketing material, call centre resources, walk/cycle incentives and public transport information. Coordination with other LTP investment plans is likely to become an increasingly important issue for PTP projects.

8.13 The DfT 'smarter choices' research, 2004, stated 'The Department for Transport believes that many of the most effective transport interventions are revenue programmes. Some of the smarter choice programmes may be classed as capital (and can therefore be funded from the local transport capital settlement) – local authorities should resolve any issues about the precise definition of capital with their auditors.'

8.14 If LTP funding is to be considered, then it is vital to seek the views (and approval) of the local authority and DfT auditors.

Local authority funding

8.15 Over and above the capital grant funding offered through the Local Transport Plan, local authorities have discretion to fund local schemes of importance. Whilst historically this has generally been used to support public transport subsidies (for non-commercial services), road maintenance, road safety, road improvement schemes or bridge works, there is no reason why PTP could not be funded through internal local authority funding if the evidence base demonstrates a strong level of effectiveness. The key issue is to create a convincing case for investment, based upon robust case study evaluation, and to demonstrate how PTP performs against a range of alternative options.

Regional funding allocation

- 8.16 For major transport schemes (currently all schemes over £5 million), there is a necessity for schemes to secure a position on the regional funding allocation and regional prioritisation process (initially through the development of a Regional Appraisal Summary Table and supporting business case). Whilst PTP programmes are not subject to this at present (because of the smaller scale of investment involved), as the market matures and larger-scale pilots are delivered this may change. There is likely to be an increasing role for embedding PTP (and other ‘smarter choices’ measures) within the Regional Transport Strategy building process (as part of the Regional Spatial Strategy).

Transport Innovation Fund (TIF)

- 8.17 Currently allocated as two distinct components (TIF Productivity and TIF Congestion), TIF provides the opportunity (to successful authorities in the bidding process) to inject significant resources into major transport schemes of local and regional importance. For the productivity component this is currently primarily focused on rail infrastructure, and, for the congestion component, a greater emphasis is placed upon road user charging combined with supporting measures. However, for both elements, there is a recognition of the role that ‘smarter choices’ measures can play in support of major infrastructure components, and hence there are likely to be real opportunities to integrate PTP projects within large-scale TIF proposals at the delivery stage. Early consideration needs to be placed on embedding PTP within such proposals at the bidding stage.
- 8.18 The ten largest cities have each developed congestion targets as part of the LTP2 process. They receive significant funding to deliver congestion strategies, up to 50% of which may be allocated for revenue-funded schemes.

Growth Area Fund (GAF) and Community Infrastructure Fund (CIF)

- 8.19 Both GAF and CIF provide large-scale funding to facilitate development in designated growth areas (generally focused on the South East, where development pressures are greatest). This provides the opportunity to deliver the necessary major transport schemes to facilitate the development opportunity. Restricted to capital investment projects of regional significance, they are unlikely to provide a realistic prospect of direct PTP funding, although they do provide important context – particularly if ‘smarter choices’ measures become more integrated with conventional transport planning approaches.

Developer contributions

- 8.20 There is a growing and likely more significant contribution from developers as PTP techniques become more embedded within the residential travel planning process (in particular since the launch of the *Making Residential Travel Planning Work* guidance and the subsequent

Guidance on Transport Assessment). The work at Queen Elizabeth Park (Surrey) and College Gardens (Doncaster) demonstrates how PTP projects can be delivered within a new residential environment.

- 8.21 The College Gardens project is being led by Sustrans/Socialdata, who have recently contacted 100 households (new residents), with very high levels of interest (60% segmented as ‘Interested’). Evaluation is more complex than other Sustrans/Socialdata projects, as there is no ‘baseline’ data on behaviour of people who have just moved into new homes, but an assessment of impact will be undertaken in due course through a post-implementation telephone survey. Sustrans/Socialdata are also conducting a standard PTP project at the same time in Doncaster (Bessacarr), and, whilst the evaluation report is not yet complete, the headline figures indicate a 7 percentage point change in the mode share as car driver.
- 8.22 There is also the potential to develop area-wide PTP programmes part-funded by several developers (for example, funded through pooled contributions from different developers, an approach already explored in Nottinghamshire through the Integrated Transport Planning Statement, and currently being implemented through the sustainable transport Supplementary Planning Documents being developed by Worcestershire districts as part of their evolving Local Development Frameworks). A similar model is being deployed within the planning profession (generally known as an ‘infrastructure tariff’ or ‘roof tax’), and is already being used in Milton Keynes and Northamptonshire (amongst others) to provide a pool of resources to enable the local authority to co-ordinate supporting measures to ensure development is delivered in a sustainable way.
- 8.23 Worcestershire County Council has been successful in gaining contributions that can be allocated to a PTP project on a new residential development. A possible disadvantage to this funding source is the amount and what can be achieved with it. For example, Worcestershire have managed to secure £50,000 from the developer, but in relative terms this may not be enough to undertake all aspects of a PTP process to a defensible level.

Partnership support

- 8.24 As demonstrated in several case studies, partnership support provides the ability to bolster PTP projects. The main potential is likely to be from bus/rail operators, who have a direct vested interest in the outcome of the PTP project (in terms of patronage and farebox revenue). Bus operators have already invested in the UK case studies – for example, in Worcester, where First Group are represented on the project steering group and contribute both staff time and project resources to the PTP project.
- 8.25 It is, however, worth noting that, as set out in Chapter 5, not all bus operators are yet convinced that the case for PTP has been fully made, and there remains a view within the industry that targeted advice and timetable updates through direct mail shot are a more cost-effective means of delivery.

8.26 The InfoMotion study in Hampshire was an early pioneer of PTP in the UK, which focused solely upon public transport and was based around a streamlined approach to IndiMark. InfoMotion also includes PSA funding and multi-bus operator involvement. Hampshire have included the future extension of InfoMotion as a key measure within their ‘smarter choices’ programme for the LTP2 period.

Related sectors

8.27 Whilst PTP is focused upon travel behaviour change, and therefore allocated within the transport funding streams, there may be opportunities to work more closely with other funding sectors to create a deliverable and cost-effective scheme. For example, the issuing of green recycling bags ‘pre-intervention’ is a good example of how the PTP programme benefits the recycling market (and vice versa), and similar models could be developed with the health sector (promoting walking and cycling as both preventative and rehabilitation tools) and education sector (promoting safe and healthy school travel behaviour, leading to better attendance and attainment of results).

Other transport budgets

8.28 PTP can bring a range of benefits to local authorities – for example, reduced car usage can mean that road maintenance projects can be scaled down, therefore effectively freeing up money with a pre-planned budget. This remaining money could be contributed towards a PTP fund. Whilst in principle this might appear an appropriate solution, the practical ability to secure funds this way has yet to be fully tested (for example, additional costs associated with increased investment in footways, cycleways and bus services would need to be included within any assessment).

Sponsorship of leaflets and information materials

8.29 The sponsorship of information materials by local or even national businesses and companies may help to contribute towards PTP costs. There is a strong pitch to present to interested parties, not least of which are the potential audience numbers of the materials that will carry a business’s logo. Another way to capture funds through advertisement revenues is to approach local services and businesses and offer to specifically locate their services on walking, cycling and public transport maps (although this would need to be carefully managed to ensure it does not compromise the overall mobility options available to any one particular service or suggest that the advice might not be unbiased).

Including PTP in relevant policy documents

8.30 At the strategic level, the correct policy framework must be in place to support PTP projects. This means that positive statements must be included in the correct documents upon which decisions are made. This includes documents such as the Local Development Framework, Regional Transport Strategies, Local Transport Plans, Local Area

Agreements, Local Delivery Plan, and Supplementary Planning Documents. These documents form the framework through which the development industry and planners operate and also through which they harness resources through the new ‘pooling approach’ to sustainable travel and ‘smarter choices’ initiatives.

- 8.31 Darlington have realised the importance of this potential funding mechanism and are planning to include PTP and related activities in the forthcoming Darlington Community Plan, which will represent a strategic vision of what the priorities in the borough will be in future years. The Darlington Partnership, which is tasked with developing the plan, has set up an Environment and Transport theme group. Transport officers are presenting evidence to the group on a wide range of measures, including ‘smarter choices’ initiatives.

Summary

- There has been a strong emphasis on central Government or European grant funding for PTP projects to date.
- Some authorities have secured annual PTP budgets from LTP and internal funds.
- PTP project partners have typically contributed through staff time and project resources (rather than financial contributions).
- There is scope for more innovative future funding mechanisms, as the evidence base grows and greater confidence is placed on the expected outcomes.

9 Objective 5: Evaluation

Introduction

- 9.1 Evaluation of PTP projects is a challenging and complex issue, requiring careful consideration from the outset. Throughout this chapter, the term evaluation refers to the monitoring and reporting of outcomes (travel behaviour results) of PTP projects.
- 9.2 First in this section the role of evaluation is clarified. Then key requirements for evaluation are outlined, taking into account theoretical principles as well as methodological options. Past experience from evaluations of PTP conducted worldwide is reviewed, including implications for evaluation methodology, before then presenting findings from the case studies examined in this project. This leads to future recommendations on evaluation.

Reasons for evaluating PTP outcomes

- 9.3 Evaluation concerns the investigation of the effectiveness of an intervention in achieving improvements to society.
- 9.4 The first and perhaps foremost purpose of evaluation is to inform decision makers of whether PTP projects are a good choice for the spending of resources, compared to other options. The benefits from PTP projects arise from changes in travel behaviour and contingent impacts, therefore a key part of the evaluation of PTP projects is a systematic investigation of travel behaviour changes and resultant effects. Systematic investigation of the costs of delivery of PTP projects is the other main requirement of evaluation and is dealt with in Chapter 7. Evaluating for the purpose of assessing value for money is known as summative evaluation and concerns measuring impacts compared with expected impacts, impacts of alternative actions or impacts of not doing anything (counterfactual).
- 9.5 A second purpose of evaluation is formative evaluation, which is concerned with understanding how a project achieved its impacts and why and under what conditions this happened. This supports adaptive learning from experience and can enable understanding to be gained on how to employ PTP in future.
- 9.6 A third possible purpose of evaluation is as an integral part of the PTP process. A dialogue about travel behaviour with participants is usually part of the initial stage of the PTP process, which offers the prospect of collecting 'before' travel data, and, if feedback is involved, further dialogue with participants may occur to see how they have fared with trying alternative travel options, which offers the prospect of collecting 'after' travel data. Also, it may be considered part of the informal contract between the PTP project team and the general public that the public is informed of the effect it has on the community.

Sufficiency of existing evidence on PTP

- 9.7 Many PTP projects have now been undertaken in the UK and worldwide, and this section seeks to establish what is known from these about the value of PTP and how PTP can be effectively applied.
- 9.8 The evaluation of the DfT PTP pilot projects in 2003/04 (DfT, 2005) concluded that it is ‘...difficult to evaluate how easily the results from these pilots could be replicated in other areas across the country... There is sufficient evidence to suggest that well tailored personal travel planning projects undertaken in carefully chosen areas should realise cost-effective car km per year savings.’
- 9.9 Cairns et al. (2004) in reviewing a wider selection of projects for the DfT *Making Smarter Choices Work* report state that ‘results so far available suggest that personal travel planning may lead to reductions in car driver trips of 7–15% amongst targeted populations in urban areas’ and ‘even where challenges have been made claiming that these results overstate the efficacy of personal travel planning, alternative figures suggested, while lower, are still within the same range as the figures quoted above and evidence that personal travel planning can reduce car use by a significant amount is accepted by those who challenge the technique as well as its supporters’.
- 9.10 A report to the Australian Government (AGO, 2006) concludes that there is ‘...little further need to undertake major evaluations of household projects, as...data is in broad agreement’ and in Australia ‘larger household projects routinely show decreases in car use of 4–15%’. The report goes on to suggest that ‘Decision-makers should be looking instead to implement what has been learnt at a much larger scale – further attempts at refinement will yield little return.’
- 9.11 However, some contrasting opinions exist. Stopher (2005) considers evaluation of travel behaviour changes the most difficult aspect of PTP and ‘there is a clear need for the development of much better short- and long-term evaluation procedures...’. Cairns et al. (2004) refer to professional disputes in Australia over the statistical validity of PTP impacts and note that in reported evaluations ‘the complexity of the processes and adjustments involved; the fact that those advocating the initiatives are sometimes also responsible for monitoring them; and the fact that the data is largely the preserve of commercial companies, released in a variety of formats, with a range of detail, and only sometimes subject to independent auditing has led to a lack of confidence in conclusions amongst some professionals’.
- 9.12 An important further question to ask is whether evaluations have been seeking appropriate information to investigate impacts. Past evaluations have generally emphasised the reporting of changes in modal split. In the brief for this project it is identified as being a requirement to measure car mileage and carbon emissions. It has been noted that these have been reported only in a minority of projects (Cairns et al., 2004; AGO, 2006). If these are to be measured, then consideration has to be given to whether current survey methods provide a suitable tool for measurement.

- 9.13 Past evaluations have also emphasised the reporting of disaggregate outcomes (at level of individuals or households). Gärling and Fujii (2006) state that ‘...in a large-scale program, aggregated level evaluation, such as change in traffic volume, regional modal share of car and public transport, frequency and duration of traffic congestion, and number of passengers in bus or trains are as important as disaggregated-level evaluation’. Furthermore, there may be interest in a broader set of impacts from PTP than the travel outcomes that have usually received attention. These include attitudes towards transport modes/services, levels of physical activity, use of local facilities and social inclusion.
- 9.14 The recently published review of the take-up of ‘smarter choices’ in Local Transport Plans (DfT, 2007) suggests that reluctance to adopt smarter choices ‘revolves around the belief that there is a lack of evidence, or a lack of relevant evidence’ and a belief that benefits of measures are not observed in the short term, although measures are helpful in guiding attitudes towards sustainable travel choices. It is suggested that, even where local authorities are active in ‘smarter choices’, lack of monitoring is preventing adaptive learning. These comments suggest that, even with consistency in reported benefits from PTP, there is scepticism among local authorities about the tangibility of PTP benefits and transferability of PTP benefits to their areas.
- 9.15 It is apparent that there are mixed signals and opinions on the future need for evaluation of PTP. Results from a large number of studies are consistent in showing reductions in car use and increases in the use of alternative modes of transport, but some doubts have been raised that the scale of impacts reported may be exaggerated and suggest improved evaluation procedures are used to examine this. This implies further need for summative evaluation. There is less certainty within the literature about what methods are most effective in PTP and in what locations and with which groups of the population PTP is most effectively applied. Gärling and Fujii (2006) suggest that ‘...further refinement and evaluation of travel feedback programs, both their effectiveness and cost-effectiveness, are called for, drawing more closely on relevant behavioural theories...’. This implies further need for formative evaluation as well as summative evaluation. Hence in this project the need for both purposes of evaluation are considered.

Principles of evaluation

- 9.16 In seeking to measure whether an intervention results in a change in outcome, there are a number of fundamental requirements for achieving robust results. These are listed below in a sequential order, where one requirement on the list should be addressed before addressing the next one:

Construct validity – ensuring that measurements are assessing what they are intended to measure (threatened by ambiguous phrasing of questions in a survey, for example).

Internal validity – ensuring that the intervention actually causes the outcome (threatened by other factors than PTP influencing behaviour, for example).

Reliability – ensuring that result would be repeatable if conducted again (threatened by the use of a small sample in a survey, for example).

External validity – ensuring that results are generalisable to other situations (threatened by the context of the intervention area not being well understood, for example).

- 9.17 It is also important that evaluations have credibility, with there being sufficient detail in reporting for credibility of results to be assessed. Some further specific requirements can be identified with respect to evaluating the impacts of PTP in case studies in this project:

Conceptual validity – ensuring that the theoretical explanation for the outcome is supported by the data (threatened by the evaluation not measuring determinants of behavioural change such as attitudes, for example).

Unintended consequences – ensuring that other relevant outcomes have not occurred which would affect evaluation (threatened by selection of geographically too narrow a population in a survey, for example).

Endurability – ensuring that outcomes are endurable over time (threatened by failure to monitor outcomes over a significant period of time, for example).

- 9.18 A further consideration for this project in comparing case studies is:

Consistency – ensuring that there has been consistency in evaluations among different PTP projects (threatened by the use of different survey designs, for example), so that results can be compared and synthesised.

How survey methodology addresses evaluation principles

- 9.19 The standard approach used to measure the impact of PTP is self-report travel surveys (on one occasion before and one occasion after PTP is conducted). Although collected in some studies, aggregate-level observations of travel (i.e. vehicle or passenger counts) are generally considered to be unsuitable as the *primary* basis for evaluation, due to the difficulty in defining locations of appropriate specificity to PTP projects (which are unaffected by the behaviour of wider populations than those participating in project).
- 9.20 Table 9.1 examines how aspects of a self-report travel survey address each of the evaluation principles discussed above. It is assumed that a measurement indicator such as car kilometres travelled during a day is being collected in the survey.

Table 9.1: How survey methodology address evaluation principles

Survey aspects	How applied	How addresses evaluation principles
Survey approach		
Household-based survey	Survey the travel behaviour of all members of a household	<p>1. Reduces variance of measurement indicator compared to person-level travel indicator, thus increasing <i>reliability</i> (for same sample size) (see Richardson, 2003)</p> <p>2. Any change to travel of a household member may affect travel of other household members (e.g. not using a car makes it available to others), hence gathering data on travel of all household members increases <i>internal validity</i>.</p> <p>Household-based surveys could reduce response rates and decrease likelihood that measured outcome is representative of total population of interest, thus compromising <i>internal validity</i>.</p>
Panel survey	Repeat survey of same sample on different occasions	<p>1. Reduces random sampling error compared to independent samples, thus increasing <i>reliability</i> (for same sample size) (see Stopher and Greaves, 2007).</p> <p>2. Enables disaggregate measurements to be made of nature of behavioural change and any other associated changes experienced by respondents, thus addressing <i>internal validity</i> and <i>conceptual validity</i>.</p> <p>3. Multiple after periods enable <i>endurability</i> of impacts to be measured. Panel surveys introduce their own challenges (see Stopher and Greaves, 2007) from issues such as attrition (compromising <i>internal validity</i>), conditioning where respondents are affected in their behaviour or responses by survey participation (compromising <i>internal validity</i>) and survey fatigue (compromising <i>construct validity</i> and <i>internal validity</i>).</p>
Control groups		
Control population within intervention area	Conduct survey of sample of participants and non-participants in the intervention area	<p>Potentially enables impact of PTP to be measured and isolated from impact of any other external factors (seasonal effects, other policy initiatives), thus addressing <i>internal validity</i>.</p> <p>Not recommended as there could be diffusion effects within intervention area.</p>
Separate control area	Conduct survey in separate area which is subject to same external influences as intervention area but not intervention	<p>Enables impact of PTP to be measured and isolated from impact of any other external factors (seasonal effects, other policy initiatives), thus addressing <i>internal validity</i>.</p> <p>Often there are measures associated with intervention but not intervention (e.g. cycle improvements) that do not take place in control area and need to be recognised in drawing conclusions on causal impact of intervention.</p>
Other affected populations	Conduct survey of population (neighbouring, for example) that might be affected by PTP but is not subject to intervention	<p>Enables <i>unintended consequences</i> of PTP to be measured. These may include impacts in same direction as intended (due to diffusion effects) or impacts in opposite direction (e.g. increased car travel taking advantage of new spare capacity).</p>

Table 9.1: How survey methodology address evaluation principles *continued*

Survey aspects	How applied	How addresses evaluation principles
Sampling		
Defining population to be sampled	The population can be defined based on all households in an area, those households listed for an area, those households contacted and offered PTP or on those that participate in PTP	The basis of defining the population can affect capability of addressing <i>external validity</i> (since boundaries, listings, contactability and participation may differ in other situations) and capability of measuring of <i>unintended consequences</i> .
Sample size	Draw larger sample	Reduces random sampling error, thus increasing reliability (see Stopher and Greaves, 2007)
Random sample or random stratified sample of population	Sampling procedure that pays attention to avoiding sampling bias (which can be contributed to by coverage bias, sample selection bias, non-contact bias and non-response bias)	Minimises sampling bias, increasing likelihood that measured outcome is representative of total population of interest, thus addressing <i>internal validity</i> . Sampling bias is very challenging to address especially where sample differs from population due to travel characteristics/attitudes, rather than socio-demographics, and hence post-sample weighting cannot correct bias. It can be minimised by using as complete as possible sample frame, random draws from sample frame, persistent and varied attempts at contact and encouraging survey response (through reminders, incentives).
Survey design		
Well-designed survey instrument	Phrase questions to avoid question non-response, non-reporting and response biases.	Ensures as far as possible that measurements represent what is intended to be measured and addresses <i>construct validity</i> . Also increases response rate which reduces potential sampling bias and hence increases <i>internal validity</i> .
Neutral design of survey	Neutral design of survey that avoids increasing awareness of behaviour under question and influencing it	Seeks to minimise 'conditioning', where the survey itself influences the behaviour being measured, and the risk that respondents may seek to co-operate in survey to receive a positive evaluation from experimenter (Hawthorne effect). It thus addresses <i>internal validity</i> .
Survey completion incentives	Avoid survey incentives that risk influencing behaviour and survey responses	As above, seeks to minimise 'conditioning', thus addressing <i>internal validity</i> . Also ensures measurements represent what is intended to be measured and addresses <i>construct validity</i> .
Process measures	Include questions on constructs such as awareness, beliefs, attitudes, norms and intentions and habit	Enables understanding to be gained on antecedent psychological constructs to reported behaviour, potentially contributing to <i>internal validity</i> (impacts resulted from intervention) and <i>conceptual validity</i> (confirmation that intervention's theorized causal impact occurred). However there is a risk that measuring these constructs could influence responses on behaviour.
Consistency of survey design	Use same survey instrument on all survey occasions and for all survey respondents	Increases <i>internal validity</i> as differences in measurements could otherwise be due to survey instrument rather than intervention.

Table 9.1: How survey methodology address evaluation principles *continued*

Survey aspects	How applied	How addresses evaluation principles
Survey variables		
Time of year	Conducting before and after surveys at same time of year (and similar weather conditions if possible)	Reduces impact of seasonal and weather factors and addresses <i>internal validity</i> .
Measurement period	Require indicator to be measured over longer period of time (e.g. two days instead of one day) and measured on same day of week in before and after survey (for same respondent in panel survey)	Reduces variance of measurement indicator, thus decreasing random sampling error and hence improving <i>reliability</i> (see Richardson, 2003). Longer measurement period results in lower response rate to survey and mis- and under-reporting, thus compromising <i>internal validity</i> and reducing <i>construct validity</i> .
Organisation conducting survey	Blind procedure for conducting survey where surveyor is independent of PTP intervention process and unaware of it	This avoids the risk of the experimenter-expectancy effect occurring or being perceived to occur where the experimenter unconsciously influences responses towards those which they expect. It can also address risk that respondents may seek to co-operate in survey to receive a positive evaluation from experimenter (Hawthorne effect). It thus addresses <i>internal validity</i> .
Survey analysis		
Univariate statistical analysis	Apply statistical analysis to collected data such as test for difference between means	Statistical tests can be used to test hypothesis that there is difference in behaviour (at chosen confidence level) and to estimate confidence intervals for difference. This addresses <i>reliability</i> .
Multivariate statistical analysis	Apply statistical analysis such as regression analysis to collected data	Multivariate statistical analysis can be used to examine relationships between behavioural responses and explanatory variables. This can address <i>reliability</i> , <i>internal validity</i> and <i>external validity</i> by testing the strength of the relationship between behavioural change and PTP intervention, controlling for other factors. It should be emphasized though that statistical tests cannot on their own prove causal relationships.
Other data		
External data	Obtain data through other measurement methods (for example, bus passenger boardings, cycle counts, car odometer readings, GPS tracking, other travel surveys)	External data enables corroboration (and potentially triangulation) to be attempted of impacts measured from self-report surveys, thus addressing <i>internal validity</i> . It can address <i>construct validity</i> if the measurement indicators are more directly related to the outcome of interest than the main survey. It can also address <i>conceptual validity</i> if it measures a different part of the impact process (e.g. a bus satisfaction survey) than the main survey. External data can address <i>unintended consequences</i> if results conflict with the main survey measurement and this is investigated. It can address <i>endurability</i> if it enables outcomes to be measured over a longer period of time than otherwise possible with main survey.
Qualitative research	Inclusion of open-ended questions in survey or separate follow-up interviews with respondents (note there are also challenges in gaining valid results from qualitative research).	Enables understanding to be gained on reported impacts, potentially contributing to <i>internal validity</i> (impacts resulted from intervention), <i>external validity</i> (impacts are not contingent on specific local circumstances), <i>conceptual validity</i> (confirmation that intervention's theorised causal impact occurred) and understanding of <i>unintended consequences</i> .

Statistical inference

- 9.21 We briefly explain the role of statistical inference in evaluating PTP interventions and discuss the issues of sampling error and sampling bias. Interest typically lies in whether PTP reduces car use, and a hypothesis test can be used to assess the evidence on whether a difference in the measured car use before and after the intervention is likely to have arisen by chance or whether some other factor is responsible for the difference. The null hypothesis of *no difference in car use before and after the PTP intervention* should be used as the basis for statistical testing. Rejecting the null hypothesis will provide a 'statistically significant' finding.
- 9.22 Data on car use (e.g. daily car trips) is collected for a sample of the target population before and after the intervention. Statistics such as the sample mean and standard deviation can be calculated for each of the samples. Sampling error (or random sampling error) arises whenever a sample is taken of a population and where we cannot be certain that the sample mean is the same as the population mean. Sampling error needs to be calculated so that a confidence interval can be found within which there is a certain probability (or confidence level) that the population mean lies. For a given confidence level (e.g. 95%), the size of the sampling error increases proportionally with the standard deviation (inherent variability) of the item being measured and the inverse of the square root of the sample size. Hence other things being equal:
- the more variability in the item being measured, the larger the sampling error;
 - the smaller the sample size, the larger the sampling error;
 - the higher the confidence level desired (for example, 99% instead of 95%), the larger the sampling error.
- 9.23 For the null hypothesis of *no difference in car use before and after the PTP intervention*, the difference between the sample means can be calculated and the sampling error is a function of the variability of the item being measured (daily car trips), the sample sizes of the two samples and the confidence level required. Again, the more variability in the item being measured, the smaller the sample sizes and the higher the confidence level desired the larger the sampling error. With a large sampling error, even when there is a large difference between the samples means there will be insufficient statistical evidence to reject the null hypothesis. Hence, efforts should be made to reduce the sampling error by increasing the sample size and, where possible, selecting a measurement item with low variability.
- 9.24 A way of reducing the sampling error for the same sample size and measurement item is to use paired samples (i.e. panel survey where the same people are surveyed in before-and-after survey) instead of independent samples. However, acquiring repeated data from the same respondents is challenging, and a reduced response rate in the 'after' survey ('attrition') can lead to sampling bias.

9.25 Sampling error affects the uncertainty or precision associated with a measured item and hence its reliability. It should be differentiated from sampling bias, which affects the expected value or accuracy obtained for a measured item and hence its internal validity. Sampling bias arises when the sample obtained is not representative of the population. While sampling error cannot be eliminated unless the full population is surveyed, sampling bias can be virtually eliminated by careful sample survey design that ensures the sampling frame does not systematically eliminate certain people and that the sample is obtained from the sample frame in a random manner. A low response rate to a survey presents a serious risk to achieving a random sample and efforts should be made to avoid this. There are other potential sources of systematic bias which should also be minimised in a survey (for example, response bias, where respondents consistently under-report or over-report travel).

Past experience of PTP evaluation

- 9.26 Two overlapping UK reviews of PTP projects have been carried out. The evaluation of DfT's PTP pilot projects (DfT, 2005) found PTP projects '...achieved reasonably consistent reductions in mode share of car driver trips ranging from three to six percentage points' and reductions in total annual car kilometres of between 50,000 and 6,200,000, depending on scale of project. The Smarter Choices report (Cairns et al., 2004) concluded from UK and international projects (Australia, Germany, Sweden, US) that 'personal travel planning typically reduces car driver trips amongst targeted populations by 7–15% in urban areas, and (based on rather less evidence and therefore a considerably less certain conclusion) by 2–6% in rural areas'. (Note that a change in car driver trip mode share will equate to a larger relative reduction in car driver trips and hence the larger figures for reduction in car driver trips noted by Cairns et al. (2004).)
- 9.27 AGO (2006) found that household PTP projects in Australia routinely show 'decreases in car use of 4–15%' and there is 'a small amount of evidence that changes appear to be sustained for at least five years'. Results from Perth show public transport boarding increases corroborating the impacts obtained from travel surveys.
- 9.28 Gärling and Fujii (2006) found from a meta-analysis of PTP projects in Japan that PTP reduced car use (varying in definition across projects from being based on car trips or car distance) by 6–27%. A comparison of the outcomes obtained for different PTP designs indicated that cases where participants were asked to set a behavioural goal had larger outcomes for car use reduction. Taniguchi, Suzuki and Fujii (2007) note that case studies in Japan have been small-scale compared to Australia and UK and have not involved corroboration with aggregate-level data.

Lessons from past PTP evaluations

- 9.29 There has been a keen debate on the results from Australian PTP projects. Stopher and Bullock (2003) have suggested that the impacts of IndiMark in Australia have been over-stated due to factors such as under-representation of large households and non-contacted/non-participating households in surveys and under reporting of trips in surveys. Roth et al. (2003) have sought to address these criticisms by presenting detailed information about the survey data used.
- 9.30 In an audit of South Perth PTP (reported in Socialdata, 2003) it is concluded that '*...assessment follows high standard of practice*' and analysis of the differences in behaviour of those receiving information and those not shows that the claim is supported that change was motivated by participation in PTP. The auditor (Professor Goulias) conducted his own multivariate regression analysis of the data to relate trip-level mode choice to explanatory variables and identify the effect of PTP participation separate from other effects (Goulias et al., 2002). In the audit it is recommended that evaluation practice could be improved by including details of sample weighting procedures, etc. in technical appendices and reporting of standard deviations and sample sizes, allowing the reader to obtain confidence intervals. It is also recommended that use of more sophisticated statistical analysis (paired tests for means, regression analysis) can improve robustness of findings, but it is stated that the simpler methods that have been used yield the same conclusion in the South Perth case reviewed.
- 9.31 O'Fallon and Sullivan (2003) have concern with respect to inadequate sample sizes and failure to report sampling errors (and hence confidence intervals), leading to uncertainty about the reliability of results. They also suggest that composition of samples may be biased towards those interested in participating in PTP. Stopher (2005) contends that 'the evaluations ... are indicative of the effects ... but cannot be considered to provide reliable information on the overall levels of travel behaviour change that can be achieved'. His main concerns relates to lack of control groups, too small sample sizes and over-reliance on results from self-completion travel diaries. It is suggested that sustainability of changes needs to be investigated and that 'evaluation should be performed by disinterested third party'.
- 9.32 Despite concluding that there is '*...little further need to undertake major evaluations of household projects, as...data is in broad agreement*' (AGO, 2006) considers that there have been 'misunderstandings of statistical methods used to interpret results, and hence problems in the sample sizes, sampling methods and evaluation periods employed'. It also notes the problem of self-selection in surveys. It recommends development of a common framework across Australian States for 'gathering, analyzing and reporting data' on travel behaviour. It is considered this will assist in long-term monitoring, especially with regards to vehicle mileage and carbon emissions. As regards methods, the report suggests paper-based travel diaries (one- or two-day trip diaries) are used for small-scale pilots and GPS for large-scale pilots with the use of odometer readings to triangulate findings.

- 9.33 In reviewing UK case studies Cairns et al. (2004) comment on evaluations noting that ‘the complexity of the processes and adjustments involved; the fact that those advocating the initiatives are sometimes also responsible for monitoring them ... has led to a lack of confidence in conclusions amongst some professionals’. They consider that future opportunities should be seized by suggesting that ‘monitoring of planned large-scale projects...as part of the DfT’s Sustainable Travel Demonstration Towns project may help to provide more convincing evidence about the effects of such schemes. It is also important that such monitoring is seen to be independent and transparent.’
- 9.34 Following the review of DfT-funded pilot PTP projects, an evaluation framework was prepared by the ORU (DfT, 2005; Annex B) for use in future projects. It *‘lists the key components, defines them, states at what stage of the project they should be considered, and provides further detail and explanation to assist with implementing each component’*. The components are:
- define aims and objectives;
 - choose the target population (stated to be entire group whose behaviour is trying to be changed);
 - select the experiment group;
 - select the control group;
 - choose the incentives;
 - specify the intervention period (stated that impact should be assessed immediately before and after intervention and some months after intervention);
 - carry out the ‘before’ survey;
 - carry out the ‘after’ survey (stated that same questionnaire should be used as ‘before’ survey);
 - analyse the results (stated that this should recognise control group impact and seasonal factors)
- 9.35 Separate guidance is given on travel behaviour surveys. It is suggested these should gather information on trips during last week, including purpose, mode used and distance travelled. It should also seek perceptions of different modes of transport. It is suggested that those offered opportunity but not participating in PTP should be included in survey. A sample size from the target population of approximately 400 valid responses is recommended.
- 9.36 Fujii and Taniguchi (2006) have noted that ‘some researchers have ascribed all the TFP effectiveness to the possibility that TFP participants were mainly ‘aspiring environmentalists’ who were already very likely to give up their cars’. They dismiss this by noting that where all households have been successfully contacted in an area similar results have been obtained. For evaluation Fujii and Taniguchi (2006) emphasise the importance of randomised control groups, the collection of process

measures (e.g. attitudes) as well as effects measures (e.g. behaviour) and for large-scale projects the use of aggregate-level data. Meta-analysis (as conducted by the authors for Japan) is put forward as a method for assessing generalisability of PTP impacts.

- 9.37 Some recent work has built on reviews of PTP evaluations to study evaluation issues in detail. Stopher and Greaves (2007) outline statistical methods to determine sample sizes required to measure impacts of intervention from before-and-after data (panel or independent cross-sections). This is based on specifying confidence interval and level of statistical significance expected and making estimates for variance (before and after) and covariance. Calculations illustrate how panel survey and use of two-day data instead of one-day data reduce sample size requirement.
- 9.38 Stopher, Swann and Bertoia (2006) have been involved in an independent evaluation of two pilot PTP projects in New South Wales that has sought to address identified issues of concern in previous evaluations. They investigated the 'before' and 'after' data to see if statistically significant differences in travel behaviour could be measured with 95% confidence level. The evaluation involved two-wave panel survey with target groups divided into participating and non-participating households, and with control groups from different geographic areas. The survey instruments involved a two-day trip diary for each member of household and a household and vehicle information form that collected odometer readings as well as other information. The paper analyses survey response rates and survey results for number of trips, mode share of trips and vehicle kilometres travelled. It found that PTP participants significantly reduced vehicle kilometres but with no significant change in mode share.

Current experience from PTP evaluations

- 9.39 The headline results for travel behaviour outcomes from the case studies are reported in Chapter 5. In this section some salient details of the evaluations that produced these results are described. It should be noted that most of the evaluations that have produced extensive results for the impact of PTP ('before' and 'after' results) have been conducted by Sustrans/Socialdata and adopt a common process, albeit with some differences according to circumstances. The New Kontiv® travel survey has been used in most cases. The **Sustrans/Socialdata process** is therefore now described with respect to the components of the ORU evaluation framework.
- Objective – to measure change in mode choice and other key indicators of personal travel behaviour.
 - Target population – all households in project area.
 - Experiment group – all households or a random sample of households in project area.
 - Control group – all households in a nearby area which is selected to be as similar as possible to target area and subject to same influences apart from intervention.

- Incentives – these are a feature of the PTP process and are described in Chapter 5.
- Intervention period – survey typically carried out six months before and after intervention. Additional after surveys carried out in Bristol (Bishopsworth) and Bristol (Bishopstone).
- Travel survey – in most cases the ‘before’ and ‘after’ samples are each drawn randomly from experiment population (and control group population) without matching the samples (i.e. not panel survey), although panel surveys have been used in Nottingham. Samples exceeding 300 have usually been achieved. The survey instrument is self-completion paper-based household questionnaire which includes set of individual travel diaries for each household member for nominated day of week. An announcement letter is sent (usually from local authority) followed by survey and two reminder letters and reminder telephone calls (which also offer assistance with completing survey).
- Travel analysis – the prime focus of the analysis is to compare the proportion of person trips by mode between the ‘before’ data and ‘after’ data. The counterfactual is taken into account by applying the control group trend to the ‘before’ data and comparing the adjusted ‘before’ data result to the ‘after’ data result. This is the result usually reported, although in some projects the measured (unadjusted) result is also reported. In some evaluations a statistical inference (based on independent samples) is conducted to test for difference in proportion of total car driver trips before and after PTP intervention. Statistical significance levels have been reported but sampling errors and confidence intervals have not been reported. Results are also reported from the data for changes in:
 - daily personal mobility (number of activities, total travel time, number of trips, distance);
 - purposes of travel;
 - car usage (used during day, trips, duration, distance, occupancy);
 - changes in mode choice by time of day, age/gender and travel purpose;
 - time spent travelling by different modes;
 - annual number of trips by mode;
 - annual car kilometres travelled (note that trips over 100 kilometres are excluded from distance analysis, with reason given that they could skew results).

9.40 The evaluation process used by Sustrans/Socialdata does not differ significantly from that set out in the ORU evaluation framework. The New Kontiv® travel survey applies to one day only (travel during past week is mentioned in ORU evaluation framework) and does not include questions about perceptions of travel modes.

9.41 Specific relevant details of the case study evaluations are set out in Table 9.2.

Table 9.2: Case study evaluations			
Project	Survey approach and control groups	Sampling and survey design	Survey analysis and other data
Sustrans/Socialdata evaluations			
Bristol Bishopsworth Sept 2002	May 2002 (b) March 2003 (a) Partial matched (panel) samples Control group in adjacent area	New Kontiv Households with phone details only Target b/a samples = 378/321 (rr = 70%/69%) Control b/a samples = 484/342 (rr = 72%/67%)	Weighting to match distribution of segments. Mode share car driver trips reported as 45–42%. Note: a different method of taking into account counterfactual has been used in this case than in other evaluations. We have carried out a new calculation which is consistent with the method usually used in Sustrans/Socialdata evaluations. This indicates mode share car driver trips 44–43% (45–43% w/out control trend).
Bristol Bishopsworth Sept 2002 (PTP plus bus improvement)	May 2002 May/June 2004 Partial matched (panel) samples Control group in adjacent area	New Kontiv Households with phone details only Target b/a samples = 378/363 (rr = 70%/76%) Control b/a samples = 484/313 (rr = 72%/70%)	Weighting to match distribution of segments. Mode share car driver trips 45–40% (45–40% with bus improvement) Car driver trips reduction -9% (-10% with bus improvements) Car distance reduction -8%. Confidence level of 90% for mode share change. Note: In the evaluation for this case the counterfactual has been calculated based on change in travel behaviour for control area between first after survey and second after survey. To isolate PTP impact from background trends (including bus improvement) the counterfactual would normally have been calculated based on change in travel behaviour change between before survey and second after survey.
Bristol Hartcliffe Oct–Nov 2003 (PTP plus bus improvement)	March 2003 May/June 2004 Independent samples Control group in adjacent area	New Kontiv Households with phone details only Target b/a samples = 374/332 (rr = 61%/66%) Control b/a samples = 342/313 (rr = 67%/70%)	Weighting to match distribution of segments. Mode share car driver trips 45–40% (45–40% with bus improvement). Car driver trips reduction -12% (-10% with bus improvements). Car distance reduction -11%. Confidence level of 90% for mode share change.
Bristol Bishopston Apr–Jun 2003	March/April 2003 Sept/Oct 2003 Partial matched (panel) samples Control group in adjacent area	New Kontiv Households with phone details only Target b/a samples = 456/450 (rr = 71%/78%) Control b/a samples = 448/415 (rr = 74%/73%)	Weighting to match distribution of segments. Mode share car driver trips 37–34% (37–34% w/out control trend). Car driver trips reduction -10%.

Table 9.2: Case study evaluations *continued*

Project	Survey approach and control groups	Sampling and survey design	Survey analysis and other data
<i>Sustrans/Socialdata evaluations continued</i>			
Bristol Bishopston Apr–Jun 2003	March/April 2003 Feb/March 2004 Partial matched (panel) samples Control group in adjacent area	New Kontiv Households with phone details only Target b/a samples = 456/478 (rr = 71%/79%) Control b/a samples = 448/515 (rr = 74%/78%)	Weighting to match distribution of segments. Mode share car driver trips 37–34% (38–34% w/out control trend). Car driver trips reduction -11%. Car distance reduction -13%. Confidence level of 90% for mode share change. Disaggregated results for five sub-areas and found consistent changes.
Bristol Southville Apr–May 2005	April 2005 June 2005 Matched (panel) samples No control group	Before survey integrated into PTP contact stage After survey by telephone interview Target b/a samples = 2053/779 (rr = 90%/68%) Travel behaviour in after survey based on average frequency of walking, cycling and public transport	Estimated car driver trips reduction -10% (inferred based on changes in average frequency of use of non-car modes and reference to previous Bristol results).
Darlington Phase 1 May–Aug 2005	Sep–Dec 2004 Nov–Dec 2005 Independent samples Town-wide control	New Kontiv Households with and without phone details Target b/a samples = 1237/1156 (rr = 59%/64%) Control b/a samples = 3032/582 (rr = 59%/61%)	Weighting to match distribution of segments. Mode share car driver trips 45%-44% (44-44% w/out control trend). Car driver trips reduction -4% Car distance reduction -6% (w/out control trend). Independent audit is being conducted and is focusing on disaggregating change of PTP participants and non-participants. Initial analysis shows greater reduction in car use for non-participants.
Darlington Phase 2 May–Aug 2005	Sep–Dec 2004 Sep–Dec 2006 Independent samples Town-wide control	New Kontiv Households with and without phone details Target b/a samples = 1246/1224 (rr = 59%/63%)	Weighting to match distribution of segments. Mode share car driver trips 44–39% (w/out control trend). Car driver trips reduction -11% (w/out control trend). Car distance reduction -11% (w/out control trend). Data for control group due to be reported in early 2008.
Nottingham Lady Bay Sep–Nov 2003 (PTP plus bus improvement)	June–Aug 2003 May–Jun 2004 Matched (panel) samples City-wide control	New Kontiv Households with and without phone details Target b/a samples = 601/450 (rr = 69%/86%) Control b/a samples = 409/485 (rr = 66%/65%)	Weighting to match distribution of segments. Mode share car driver trips 41%-36% (39%-36% w/out control trend) Car driver trips reduction -12% Car distance reduction -12% Confidence level of 90% for mode share change

Table 9.2: Case study evaluations *continued*

Project	Survey approach and control groups	Sampling and survey design	Survey analysis and other data
Sustrans/Socialdata evaluations <i>continued</i>			
Nottingham Meadows Sep–Nov 2003 (PTP plus bus improvement)	June–Aug 2003 May–Jun 2004 Matched (panel) samples City-wide control	New Kontiv Households with and without phone details Target b/a samples = 535/402 (<i>rr</i> = 61%/80%) Control b/a samples = 409/485 (<i>rr</i> = 66%/65%)	Weighting to match distribution of segments. Mode share car driver trips 29%-26% (27%-26% w/out control trend). Car driver trips reduction -10%. Car distance reduction -10%. Confidence level of 90% for mode share change.
Peterborough Phase 1 Sep–Dec 2005	Sep–Nov 2004 Feb–Apr 2006 Independent samples Town-wide control	New Kontiv Households with and without phone details Target b/a samples = 1073/1228 (<i>rr</i> = 60%/64%) Control b/a samples = 3388/666 (<i>rr</i> = 60%/60%)	Weighting to match distribution of segments. Mode share car driver trips 43%-38% (43-38% w/out control trend). Car driver trips reduction -13%. Car distance reduction -15%. Confidence level of 99% for mode share change.
Worcester Phase 1 Sep–Dec 2005 (PTP plus Worcester Express bus improvement)	Sep–Nov 2004 Mar–Apr 2006 Independent samples Town-wide control	New Kontiv for before survey After survey by telephone interview Households with and without phone details Target b/a samples = 978/962 (<i>rr</i> = 59/87%) Control b/a samples = 3147/446 (<i>rr</i> = 59/88%) Travel behaviour in after survey based on average frequency of mode use	Weighting to match distribution of segments. Estimated car driver trips reduction -12% (and walking +17% increase, cycling +36% increase, public transport +22% increase). Aggregate-level bus patronage data showed promoted bus services (aside from Worcester Express) increased in patronage by 26% and other services decreased in patronage by 16%.
Steer Davies Gleave evaluations			
Bristol Easton Jan–Mar 2006	Dec 2005 Dec 2006 Matched (panel) samples No control group BCC/SDG headed survey	Postal surveys with one-day travel diary Target b/a samples = 54/32 (<i>rr</i> = 10%/na) Separate after postal survey of PTP participants (TravelEaston headed) with mode usage increase/decrease/same question Sample = 262 (<i>rr</i> =17%)	Panel survey (low sample makes results subject to considerable random variation): PTP participants mode share car driver trips 41%-34% (12 PTP participants responded to before survey and 8 to the after survey). PTP non participants mode share car driver trips 33%-39% (42 non participants responded to before survey and 24 to the after survey). PTP participant survey: 40% reduced car use/10% increased car use. Increases reported in other modes.
Bristol Clifton/Cotham Aug–Nov 2006	Jul 06 Unknown No control group	Postal surveys 1,000 travel diaries posted for 'before' survey	Results not reported yet.
Bristol Clifton/Cotham Aug–Nov 2006	Jul 06 Unknown No control group	Postal surveys 1,000 travel diaries posted for 'before' survey	Results not reported yet.

Table 9.2: Case study evaluations *continued*

Project	Survey approach and control groups	Sampling and survey design	Survey analysis and other data
Social Research Associates evaluations			
Brighton PTP Jun–Oct 2006	Mar/April 2006 Before Nov 2006	Before doorstep surveys with one-day travel diary 1,968 households participated in 'before' survey No information on sampling procedure, contact rate, etc. After doorstep survey with about 2,000 households	Only headline evaluation results available from analysis. Mode share car driver trips 54%-50% (assumed to be w/out any control trend taken into account). Car driver trips reduction -6% (assumed to be w/out any control trend taken into account). Purposive sample of 25 persons interviewed after PTP to gain qualitative insights.
Synovate evaluations			
London Camden	Panel survey Control group	Telephone survey Seeking samples of 500 for target and control groups Questions about monthly frequency of use of modes	Survey not conducted yet
Key: b = before survey, a = after survey, rr = response rate, hh = household			

9.42 Comments that can be made from Table 9.2 are the following:

- Survey response rates are exceptionally high, particularly for Sustrans/Socialdata surveys, and this is a key strength of the evaluation processes adopted. Note: despite this, a concern is always likely to remain that sampling bias due to 'self-selection' affects results and therefore efforts should be made to compare characteristics of survey respondents to area population characteristics (using census data) and to corroborate survey findings through other data (aggregate-level data).
- Pre-analysis weighting of samples has been conducted to enable matching of distribution of PTP segment groups with experiment population. Information has not been provided in evaluation reports on the weighting process, and it would aid transparency if this was provided.
- Results are usually reported for changes in behaviour *attributed to PTP projects* taking into account counterfactual (control group trend), rather than the measured changes in behaviour (for the experiment group). Implications of this are discussed in Chapter 5.
- There is a general absence of disaggregation of results by participation segments within the UK evaluation reports, which would assist in examining differences in behavioural change for those households engaging in PTP and those not. This is a focus for investigation of the independent auditor of the Darlington Phase 1 evaluation.
- Hypothesis testing has been conducted on the difference in the proportion of trips made in the target area that are car driver in the 'before' and 'after' surveys. For this measurement indicator, it is uncertain what is the appropriate sample size that should be used for statistical tests (neither number of persons or number of trips is strictly appropriate). Hence a preferable alternative would be to conduct statistical tests on household or person daily car trips or

mileage where it is clear that sample size to use in statistical tests is number of households or persons.

- Lack of reporting of sampling errors (and hence confidence intervals) which prevents readers from appreciating the uncertainty associated with the estimates of measured differences in mode share.
- There is only limited experience of the collection of matched (panel) samples and, where these have been used, advantage has not been taken of them for statistical tests or disaggregate analysis of behavioural dynamics.
- Limited use of aggregate-level data to corroborate survey results.
- Very little collection of process measures and qualitative data to seek to understand reasons for behaviour change (or non-change).
- Most evaluations to date have been conducted by interested parties (i.e. those involved in both the delivery and evaluation of PTP).

9.43 It is important to note that there have been limitations on the resources available for evaluations, and this has clearly restricted the evaluations (e.g. sample sizes, matched panels, collection of corroborating data, collection of qualitative data). However, it is believed that many of the issues above relate to analysis of the collected data and results presentation and could be addressed with the existing data.

Critical assessment of the evaluations

9.44 The methods of evaluation that have been used are now reviewed (Table 9.3) with respect to the theoretical survey criteria identified previously.

Table 9.3: Theoretical assessment of case study evaluations against survey criteria		
Survey criteria	Comments	Threats/advantages
Survey approach		
Household-based survey	The Socialdata New Kontiv survey is designed to obtain travel behaviour for all members of a household, although its success in achieving this is not reported. Analysis is not conducted at household-level.	Design supporting collection of travel data for all household members increases <i>internal validity</i> . Analysis at person-level increases variance of measurement indicator, hence reducing <i>reliability</i> .
Panel survey	In most cases independent cross-sectional samples collected 'before' and 'after' intervention. No disaggregate analysis is possible of behavioural dynamics which would be possible with panel survey data set.	Increased sampling error and hence reduced <i>reliability</i> . Compensated to some extent by avoiding panel survey issues such as attrition, conditioning and survey fatigue and reducing threats to <i>internal validity</i> . Inability to conduct disaggregate analysis threatens <i>internal validity</i> and <i>conceptual validity</i> . Single 'after' survey limits ability to examine <i>endurability</i> of intervention impact.

Table 9.3: Theoretical assessment of case study evaluations against survey criteria
continued

Survey criteria	Comments	Threats/advantages
Control groups		
Control population within intervention area	In TravelSmart evaluations households that do not participate (but have been attempted to be contacted) are members of experiment group, presumably as there may be diffusion effects.	Considered that appropriate approach has been taken.
Separate control area	In TravelSmart evaluations a control group from a nearby area is usually surveyed. In some cases it is questionable whether the control area satisfies the challenging objective of being subject to same influences as target area, except for PTP (e.g. target area subject to local initiative plus PTP).	Use of control group has supported the attempt to take into account counterfactual, hence addressing <i>internal validity</i> . However, in some cases control group is not sufficient to isolate PTP impact.
Other affected populations	This has not been conducted due to additional costs.	It has not been possible to examine <i>unintended consequences</i> of PTP for areas outside target area. It would be helpful for a PTP project to take place coinciding with a major collection of travel data or for innovative use to be made of existing sources of data to examine this.
Sampling		
Defining population to be sampled	Households listed in project area (based on combination of electoral register and commercially available telephone databases) that are to be contacted and offered PTP. Assumed that random selection from lists has been successfully achieved.	Threat to <i>external validity</i> from the proportion and nature of households listed varying from one area to another and the age of listings varying from one area to another – not considered significant threat.
Sample size	These vary from 300 to 1,200	Sample sizes have been insufficient in general to provide prospect for changes in travel behaviour of approximately 10% to be statistically significant at the 95% level. Attention is suggested to be given to using panel survey, longer measurement period, household-level indicators and car trips or mileage as measurement basis for conducting statistical tests and reviewing sample size requirements in this light.
Random sample or random stratified sample of population	Contact attempted through mail and telephone with reminders and assistance given to achieve survey responses. High response rates (typically 60–80%) achieved in Socialdata surveys. Post-survey weighting used to obtain representative sample.	Good efforts in achieving high response rates and hence decreasing (systematic) non-response bias, potential threat to <i>internal validity</i> . However, it is almost impossible to remove non-response bias. Pre-analysis weighting cannot fully address this, as some households will not respond (to ‘before’ and/or ‘after’ survey) for reasons confounded with the survey objectives (evaluating impact of PTP). This needs to be recognised and attempted to be managed by seeking corroboration from other data.

Table 9.3: Theoretical assessment of case study evaluations against survey criteria
continued

Survey criteria	Comments	Threats/advantages
Survey design		
Well-designed survey instrument	The Socialdata New Kontiv survey is clearly designed and user-friendly	Threat from <i>construct validity</i> is minimised from the design
Neutral design of survey	The Socialdata New Kontiv 'Survey of Day-to-Day Travel' makes no reference to PTP or other transport initiatives	Threat from <i>internal validity</i> is minimised from the design
Survey completion incentives	Socialdata use no survey incentives	Threat from <i>internal validity</i> is removed
Process measures	The Socialdata New Kontiv survey does not seek data on behaviour process measures, as it is considered that these should not be mixed with behaviour outcome measures, as there could be conditioning effects	Limits possibility to gain understanding on why behaviour changes or does not change which could contribute to <i>internal validity</i> and <i>conceptual validity</i>
Consistency of survey design	The same New Kontiv survey has been used in 'before' and 'after' surveys for both experiment and control groups	Increases <i>internal validity</i> as differences in measurements could otherwise be due to survey instrument rather than intervention
Survey variables		
Time of year	Usually 'before' and 'after' surveys conducted one year apart at the same time of year. Weather conditions during surveys have not been reported.	Addressed as well as feasibly possible – not considered significant threat
Measurement period	The Socialdata New Kontiv survey includes one-day travel diary. Two-day diaries have been recommended by Stopher and Greaves (2007).	Increased sampling error and hence reduced <i>reliability</i> . Compensated to large extent by reduced survey completion burden and increased survey response rate and hence reduced (systematic) non-response bias and lessened threat to <i>internal validity</i>
Organisation conducting survey	Socialdata conduct the survey as part of a project partnership with Sustrans. It is not clear whether the public associate Socialdata with PTP process.	Separation of the survey organization from the PTP organization lessens to some extent the risk of experimenter-expectancy effect and respondent co-operation, hence addressing <i>internal validity</i> .
Survey analysis		
Univariate statistical analysis	Results are not disaggregated by participation segment. This requires reference to PTP participant database to tag survey respondents. Statistical tests have been carried out for change in proportion of car driver trips in some TravelSmart project evaluations with confidence levels reported but sampling errors not reported and it is unclear what unit of analysis is appropriate for this test (persons or trips). It is suggested that daily person car trips or mileage would be better indicators to use in statistical testing.	Lack of disaggregation of results for participation segments limits understanding of the impact of PTP and is a serious weakness, which threatens <i>internal validity</i> . Lack of reporting of sampling errors is compromising understanding of <i>reliability</i> . More effective statistical tests could be carried out based on car trips or mileage.
Multivariate statistical analysis	No multivariate analysis has been reported. A wealth of data has now been accumulated, suiting itself to multivariate analysis	Multivariate statistical analysis has potential to increase <i>reliability</i> , <i>internal validity</i> and <i>external validity</i> of evaluated impacts.

Table 9.3: Theoretical assessment of case study evaluations against survey criteria
continued

Survey criteria	Comments	Threats/advantages
Other data		
External data	In a few cases bus passenger data has been available and results have been consistent with travel survey results.	There has been limited corroboration attempted of travel survey results with aggregate-level data, thus threatening <i>internal validity</i> and measurement of <i>endurability</i> .
Qualitative research	This has only been conducted in Brighton.	The lack of qualitative research has limited the opportunity to address <i>internal validity</i> , <i>external validity</i> , <i>conceptual validity</i> and <i>unintended consequences</i> .

Recommendations on future evaluation needs

- 9.45 An immediate priority is for further analysis of existing data sets to be conducted to examine differences in behavioural responses for those households/persons engaging in PTP and those not. This is a focus for investigation of the independent auditor of the Darlington Phase 1 evaluation and promises to provide key evidence for whether it is the PTP intervention that is responsible for reported behavioural change or whether behavioural change is an artefact of the characteristics of those people that complete the surveys or the way in which they report their behaviour.
- 9.46 Additionally, further independent analysis of existing data sets could be carried out using car trips and car mileage as the measurement indicators for statistical tests. These indicators are more appropriate for statistical testing. There is also potential for multivariate statistical analysis (e.g. regression analysis) to examine factors influencing behaviour and behaviour change.
- 9.47 As reported in Chapter 5 (Tables 5.2, 5.3 and 5.4), and summarised in Table 9.2, the impact of the control group can have a large effect on the overall level of change reported. In addition to the issues discussed in Chapter 5, when considering the role of control groups it is important to recognise that the measurement of the effect of other smarter choices interventions (e.g. school and workplace travel plans, public transport marketing) is typically based on simple before/after surveys, with no control group adjustment, and it is considered helpful if practitioners were able to make direct comparisons between UK smarter choices interventions.
- 9.48 For future PTP evaluations it is therefore recommended to include control groups within the evaluation process, and to report the impacts taking this into account (as it is fully recognised that properly-conducted control groups, supported by robust corroborative data, provide a valuable insight into the magnitude of change associated with PTP). However, this should not be at the detriment of reporting the measured effects for the target households, which should also be included within all evaluation reports.

9.49 Further analysis of existing data can help to address some of the issues identified in paragraph 9.42, but it seems likely there will remain outstanding issues such as *endurability of impacts* and *lack of understanding of the process of behavioural change* resulting from PTP. It is recommended therefore that immediate priority is given for in-depth evaluations (for which suitable scale resources are allocated) to be carried out for a small number of PTP projects (these could be current projects if suitable 'before' data has been collected). This should involve some of the following characteristics:

- evaluator independent of PTP provider;
- panel survey with multiple 'after' periods;
- use of target and control group (with the full reporting of both);
- random samples from target and control group households;
- household-based, postal questionnaire;
- one-day travel diaries or longer-period travel diaries (the latter only where it is possible to provide survey support through survey staff visits/telephone calls to assist survey completion);
- odometer readings;
- strong survey management protocols based on local travel survey (ITS) guidance or national travel survey;
- qualitative interviews with random sample of experiment group to better understand opinions and reactions to PTP and the behavioural change process;
- collection of project-area relevant aggregate-level data for public transport boardings and vehicle and pedestrian counts;
- testing of the use of GPS (either 'in-vehicle' and/or 'personal devices') for collecting travel data as an alternative to self-completion travel surveys.

9.50 Guidance on conducting household travel surveys is provided by LTS guidance issued by DfT (2006), and this provides a good basis for planning and designing a household survey. Many aspects of the travel survey procedures adopted in the PTP projects to date are also commended, particularly the survey design and management procedures, resulting in high response rates.

9.51 If the issues identified in paragraphs 9.42 and 9.49 are able to be addressed (via further analysis of existing data and independent in-depth evaluations of project(s)), then, for most future projects, a more pragmatic, limited 'light touch' evaluation is likely to be warranted. Area-wide travel surveys can only provide reliable and valid results when sufficient attention is paid to aspects such as achieving good response rates, so it is suggested these are best deployed when sufficient resources are available for conducting them. Where this is not feasible, emphasis should be placed on: qualitative interviews with small random samples of PTP experiment group which seek information on behavioural changes; and on collecting relevant aggregate-level data for the project area. These would enable adaptive learning to be undertaken.

Summary

- The key aspects for monitoring and reporting results are to ensure that:
 - measurements are assessing what they are intended to measure;
 - the intervention actually causes the outcome;
 - the result would be repeatable if measured again;
 - the results are generalisable to other situations;
 - the theoretical explanation for the outcome is supported by the data;
 - other relevant outcomes have not occurred which would affect evaluation;
 - outcomes are enduring over time;
 - there has been consistency in evaluations between different PTP projects so that results can be compared and synthesised.
- For large-scale projects, the approach prescribed by the DfT ORU has been largely applied.
- There is consistency in the reported outcomes from PTP projects, but there are some gaps in information reported and in understanding which need to be addressed as a short-term priority.
- It is recommended that immediate priority is given to in-depth independent evaluations of a small number of projects which should lead to more limited 'light touch' evaluations being possible subsequently.

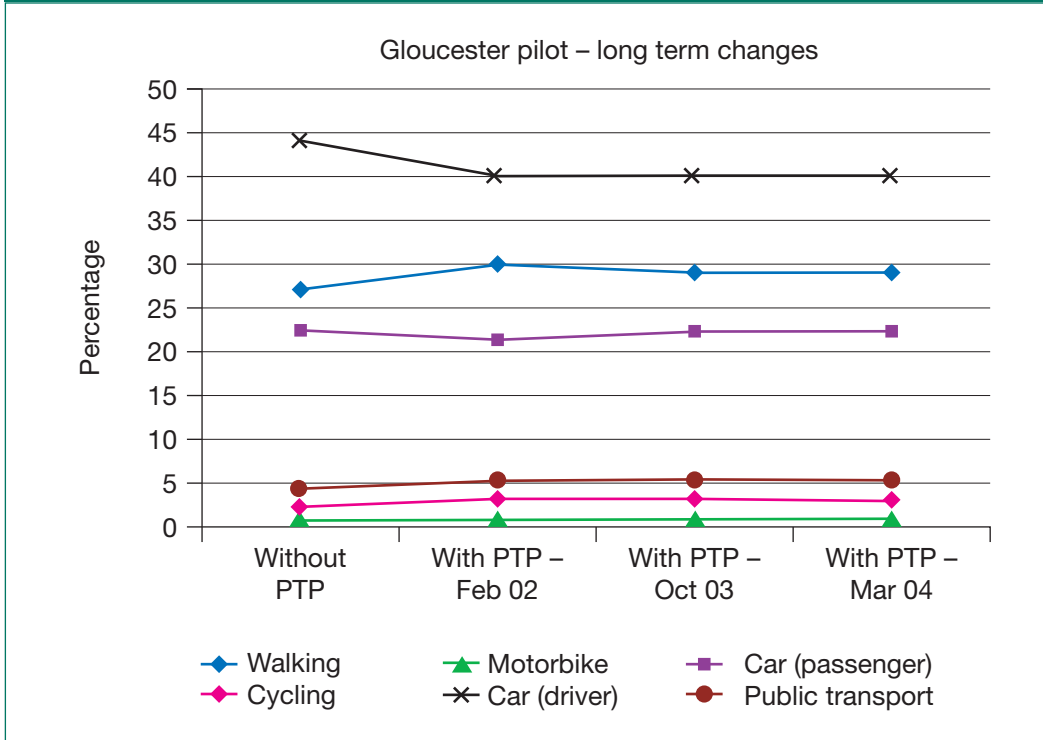
10 Objective 6: Long-term sustainability

- 10.1 Most UK PTP projects are still relatively 'young' in nature, and as such are still in the process of undertaking post intervention evaluation. Therefore much of the information relating to long-term sustainability is based upon information collated overseas, notably Australia. Work undertaken in Gloucester provides a UK example of longer-term monitoring of impacts.
- 10.2 The issue of sustained monitoring can be complicated, which is mostly down to costs but also the ability to contact the original people that took part in the initial intervention, as populations are changing. Another factor is that any sustained monitoring through corroborative data may be distorted if major infrastructure or service improvements to public transport have been completed in a local area subsequent to a PTP intervention.

UK evidence

- 10.3 An examination of the UK evidence relies on evidence sourced from Gloucester. Figure 10.1 illustrates travel behaviour change that has been sustained from the Gloucester pilot project undertaken in 2001 with a random sample of 500 people in the area of Quedgeley. A control group was used to compare the behaviour and results of the sample group.
- 10.4 Figure 10.1 illustrates how the percentage of trips per person by transport mode of the participants, over a period of two years, compares to the control group results. The percentage figures for walking are still higher than the control group figures, as are the percentage figures for cycling and public transport. The increase in percentage of public transport trips has been sustained, as has the reductions in the percentage of car as driver trips.

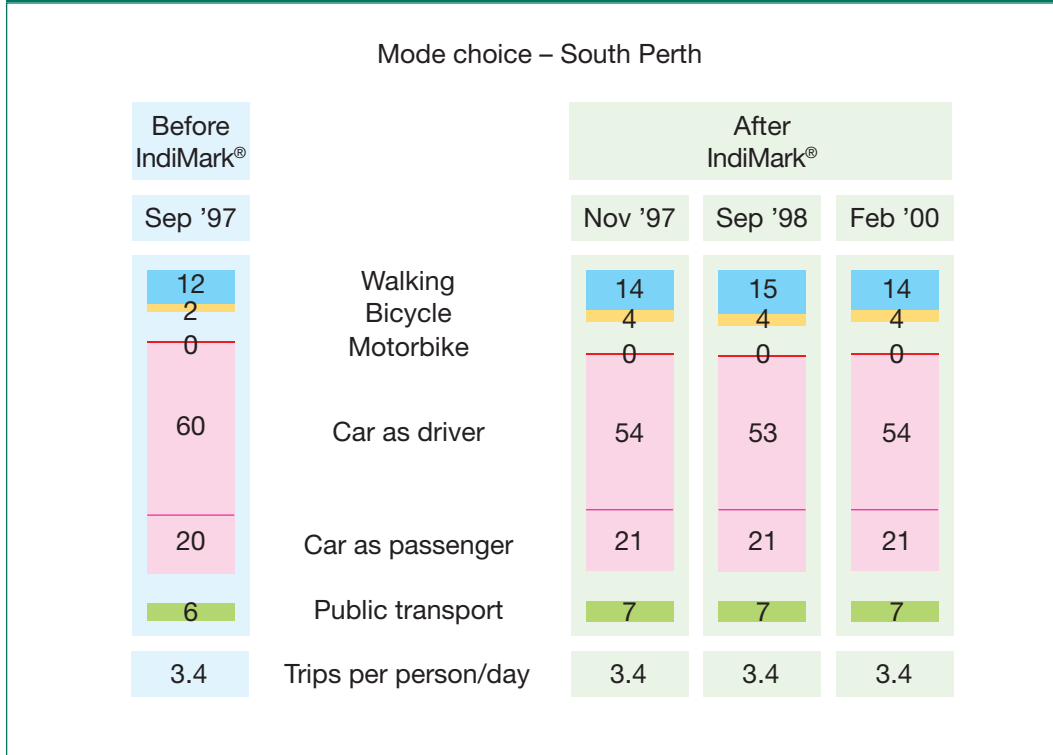
Figure 10.1: Gloucester long-term behavioural changes



Overseas experience

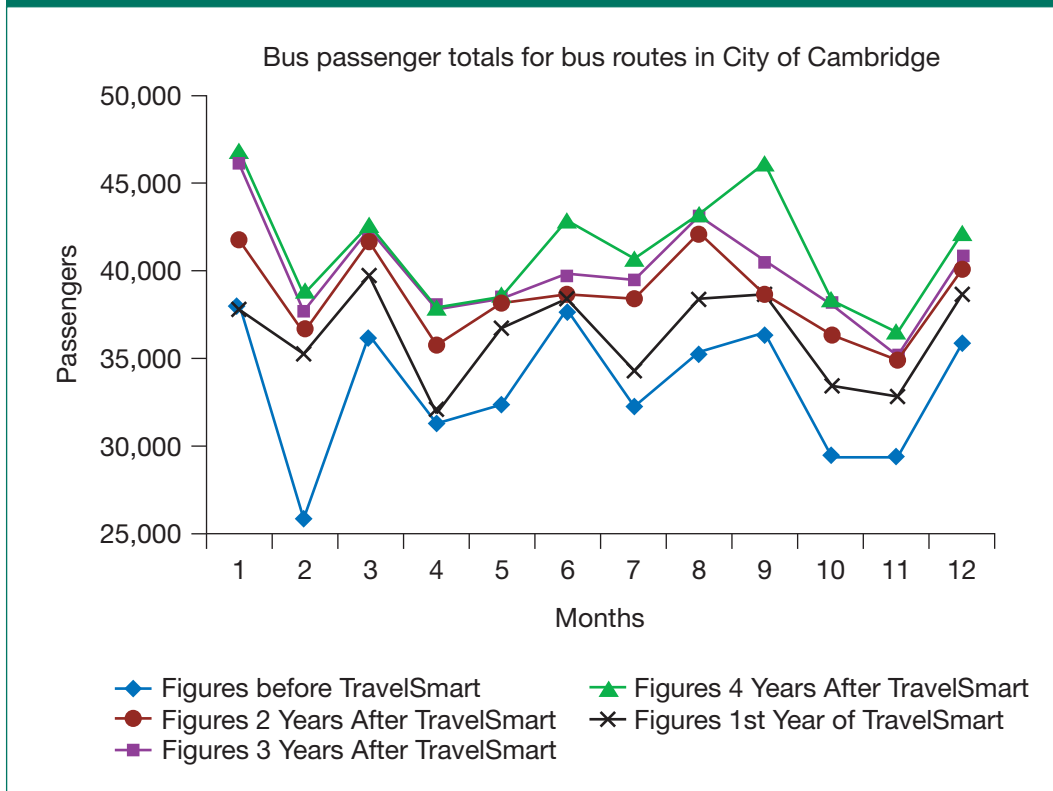
10.5 Figure 10.2 show the mode choice of South Perth residents two and a half years after the PTP intervention. The results are encouraging, showing that, whilst the number of trips people make each day has not changed, the use of more sustainable modes of transport has increased.

Figure 10.2: Sustainability of South Perth project



10.6 In addition to the evaluation process undertaken through the PTP programme, corroborative data has been taken from bus boardings in Perth. The results of this are shown in Figure 10.3.

Figure 10.3: Long-term bus patronage changes (Perth)



- 10.7 This shows sustained growth even four years after the implementation. It is important to note that these figures are taken from a group of services (28, 81, 84, 85, 91, 92, 95 and 401), which have remained consistent (quality, timetable, reliability) throughout the intervention period. These services also run from the city centre to the coast, and hence have not been influenced by outlying development. These results are also matched by customer satisfaction with public transport, which has seen rises from 31% satisfied before, to 48% satisfied after, and by comments received by the authority from customers of the PTP programme.
- 10.8 However, in Melbourne there have been some concerns about the long-term sustainability of PTP in isolation, for example in Darebin, where the project was completed between April 2004 and October 2004, the final evaluation in September 2005 showed that traffic levels in the region had reduced initially, but had returned slowly to near expected levels – approximately 1% below expected.
- 10.9 Beliefs over long-term sustainability relate closely to the beliefs that behavioural change is not a one-off change, but a significant long-term lifestyle change. The newly acquired change in travel behaviour is consistently reinforced by the personal benefits experienced by the individual, for example better health, less stress, better time management, cost savings etc. According to Brog et al. (2003), as long as the quality of the new travel behaviours remains high, individuals will have no need to revert to their past travel behaviour. Whilst there are triggers such as moving house that could induce a change back to previous travel behaviour, individuals who have already trialled alternative modes of transport are more likely to search out alternatives in a new area or perhaps even be influenced by the sustainable transport alternatives available, for example, when looking for a house.
- 10.10 Opponents of PTP have argued that this phenomenon does not occur in practice, and that participants fall back into old habits..
- 10.11 The National Travel Behaviour Change Program in Australia is monitoring the impacts of initiatives over a five-year period from 2008 to 2013, which will provide long-term assessment of impacts of the PTP programmes. A similar programme could be adopted in the UK, building upon the current large scale PTP projects.

Other issues

- 10.12 Darlington Borough Council have launched their Local Motion club, which targeted individuals are invited to join. The club is an attempt to maintain contact with participants, to continue to encourage and motivate them to change their travel behaviour where they can. This initiative offers a relatively low-cost alternative to PTP, after initial contact has been made. A similar approach is being adopted with the Peterborough MyTravel Choice programme, where households are encouraged to sign up to the 'good going' pledge, again providing a long-term registration of households with whom further dialogue can be readily achieved.

- 10.13 In Nottingham, the long-term contact with individuals is sought through subscription to the Citycard smartcard – in effect all recipients of the card must register either on line or via telephone to activate the card and start claiming the benefits associated. This provides a powerful direct contact database of willing participants, with whom Nottingham City Council will be able to issue direct electronic updates on public transport, walk and cycle promotions in the future, along with regular newsletters on events, activities and promotions.
- 10.14 In Australia, the concept of the transport café has been developed by Brisbane City Council as a possible alternative delivery mechanism to the traditional form of PTP – instead of bringing information directly into households (via telephone and mail), a central point of contact was selected where households regularly visit (i.e. a shopping centre). At this ‘delivery point’, a compressed version of the PTP ‘dialogue’ is undertaken, in conjunction with the distribution of relevant brochures, timetables, maps etc. Bus drivers were also on hand to answer resident’s questions regarding public transport use.
- 10.15 Comparative evaluation of this delivery mechanism vs PTP indicated a number of issues which need to be addressed if the transport café is to be considered a more robust methodology. This includes:
- the reluctance of some people to engage in a meaningful conversation about their travel behaviour in this physical environment. The familiarity of the home environment and the ability of people in this context to consider travel behaviour at their leisure is seemingly an important aspect;
 - the ephemeral nature of the transport café precludes people coming back to ask more questions/resolve issues etc. A feedback telephone line helped, but at the core of this issue is that the traditional PTP process goes on for a reasonable period of time, whereas transport cafés in the two Brisbane applications only went for a couple of weeks. A longer application time is required;
 - some people missed out on the cafés, as they were away or went to the shops outside the times of the café. Hence there is a need for a more intensive presence at the shopping centre during the time of the project.
- 10.16 On the positive side, the transport cafés showed:
- they were much cheaper to deliver;
 - they had a very high recognition factor with the public. They were also highly regarded by the public and did much to boost the council’s image. The shopping centres also regarded them highly and waived the normal fee for using internal space;
 - they were highly regarded by local councillors, who used the opportunity to engage with their communities;

- they were very popular with people who just wanted general information on walking, cycling and public transport (i.e. not a detailed conversation about personal journey planning).

10.17 An independent evaluation commissioned by the Council showed that the traditional form of PTP demonstrated travel behaviour change in accordance with the expected target for change. Whilst the transport café didn't deliver this quantum of change, it was still a cost-effective method of delivering travel behaviour change and has considerable potential for growth. Ideally, the transport café could be used as an adjunct to household delivery or as a reinforcing methodology to communities who have already engaged in a wider PTP programme.

Summary

- There is only limited evidence on which to assess the long-term sustainability of previous campaigns, and as such it is not possible to fully ascertain the long-term impacts of PTP interventions.
- The limited evidence that does exist, suggests that travel behaviour is sustained in the immediate years following the intervention (up to 5 years afterwards), although further work is required to fully validate these findings.

11 Other issues and opportunities

- 11.1 Throughout the course of the study a number of issues have been identified, which, though not directly related to the core objectives of the study, are worthy of note. These are set out below.

The profile of PTP and smarter choices

- 11.2 The work of the DfT's Operational Research Unit has highlighted the lack of profile (or in some case acknowledgement) of 'smarter choices' measures, and PTP in particular, within many of the second Local Transport Plans submitted by all local authorities in March 2006. For PTP to gain a wider subscription this needs to change, and a focused programme of support to local authorities, combined with the publication of clear and defensible impacts of such measures, must be a priority.

Telephone contact

- 11.3 Land-line telephone contact is becoming problematic in cities and for mobile populations. Increasingly, younger people are choosing a mobile-only phone option. Telephone preference lists are also reducing the proportion of households contactable by phone. In London, TfL abandoned the phone option as the primary contact method for reaching households – in theory it was believed that 60% of residents would be accessible by phone – the actual phone coverage was 35–40% of residents. In the future the development of computer-based phone systems such as Skype is likely to reduce traditional landline phones even further. Once the number of households contactable by phone reaches a certain level, it may not be a practical option for PTP. The landline phone system as a marketing tool in other sales areas is an option that is contracting.

Reliance on paper

- 11.4 Paper-based PTP approaches for ordering materials and noting householder availability have been identified by a number of practitioners as being potentially wasteful of resources. They reduce the opportunity to make use of all the information that could make the schemes run more smoothly. One alternative approach would be to make better use of mobile communications (personal digital assistants or mobile laptops). This would clearly require further investment in the process, and would need to be carefully tested to ensure it doesn't affect the quality of contacts with households, restricting the advisors' ability to engage in a friendly conversation. Historically, successful PTP approaches use hard-copy records at the interface with households, phone and door, combined with a computer database for managing household records.

- 11.5 The benefits of such an approach would be (some of which are already available with existing paper-based systems, combined with an efficient management database):
- the materials order can be transferred directly to the database – no input staff are required. There is then only one place where an error in recording can be made, and that is at the door;
 - this could mean that the delivery of packs would be next-day;
 - a new contact household list can be produced for the following day, automatically allocating ‘none’ respondents to appropriate time slots on the next day;
 - information on household contacts in particular types of area could be used to target staff ‘first knocks’ more effectively – for example, flats in area A are more likely to be occupied by single, working professionals who are traditionally contacted at weekends or mid-week evenings;
 - each PDA download session and materials order will be attributable to an individual travel advisor– allowing checks to be made on number of household visits, successful visits, whether there is any travel advisor bias in materials ordered, e.g. fewer than average cycling information requests;
 - information can be produced to show ‘best times’ for catching residents at home, as each ‘no show’ or ‘conversation’ can be time-allocated;
 - monitoring and evaluation information about materials ordered will be registered immediately and future re-ordering of materials can be handled more efficiently.

Future dissemination of information

- 11.6 Two of the case study sites expressed an interest in considering alternative methods of disseminating information to households (post-completion of their current projects), making use of existing travel website, online journey planning and electronic timetables.
- 11.7 Lancashire would like to investigate the idea of diversifying the information delivery through the web and using mobile phone technology. In the later stages of the current TravelSmart programme, households are being asked to register for a free e-mail update service once they have received their information packs.
- 11.8 It is, however, important to recognise the importance of engagement within the PTP process, and practitioners are generally in agreement that this must form an essential component if travel behaviour change is to be seriously tackled. Further work will be required to identify whether less-intensive approaches are able to deliver similar levels of long-term behavioural change, or help sustain changes achieved by more intensive approaches.

Life changes

11.9 Whilst PTP projects have demonstrated effective outcomes based upon area-wide approaches, there remains a further long-term opportunity to potentially support this work by building upon existing networks and communication channels to target people during life-changing moments, when individuals may be most likely to deliberate about travel behaviour and break habits. For example:

- moving house (when you register for Council Tax or the electoral register) – as developed by Nottingham through closer integration with the council search team;
- moving school (crèches, nurseries, primary school year 6, secondary school year 11);
- applying for a new job – though links with JobCentre Plus and accessibility partnerships;
- getting a place at college or university – the student population can be up to 20% in some university towns, and PTP in this environment therefore needs to be a rolling programme and information needs to go out regularly to home locations;
- applicants for an over-60 public transport pass;
- active travel packs and referrals from GPs, leisure centre staff, sports clubs – for concentrated support on cycling and walking options locally;
- when a public transport service improvement reduces travel time on a key route;
- when car parking charges are introduced, or parking charges are increased, at workplaces or in shopping areas;
- when considering applying for a driving licence – for example, offering PTP advice during the course of driving lessons and/or when individuals are required to re-apply for a driving licence. For example, in Kyoto, Japan, drivers seeking to renew a licence are provided with PTP relating to sensible use of the car, and options available for public transport for the individual and their trips;
- along routes where a planned temporary or permanent road change is about to increase travel time for car users with viable alternative public transport options.

Business skills within the transport sector

11.10 One of the challenges to PTP is that individuals working in the ‘smarter choices’ transport sector are generally not trained to produce business cases and cost–benefit analyses. This is a weakness that needs to be rectified if PTP (and other measures associated with the wider ‘smarter choices’ agenda) is to gain widescale buy-in. Although the best practice guide accompanying this research report sets out some generic

guidance, additional detail or directly delivered advice may also be required to give local authority officers confidence in their actions and decisions.

Home Information Packs

- 11.11 Any future introduction of Home Information Packs (HIPs) would present a unique way of accessing new movers, a group that is seen as particularly amenable to travel behaviour change because of the lack of establishment of habitual travel behaviour. In Nottingham, the 'public transport team' work closely with the 'searches team' to integrate the smartcard contact database and 'searches request' database to ensure that all new residents and house movers receive a personal journey planner each time they move. TfL also are investigating similar approaches.

Travel cafés

- 11.12 The Brisbane case study raises the concept of travel cafés as a possible alternative method of delivering PTP (or supporting future PTP projects). This delivery mechanism serves to provide a central point of contact in an area where households regularly visit, for example a shopping centre. At this 'delivery point' a compressed version of the PTP dialogue can be undertaken in conjunction with the distribution of the relevant information materials. Whilst this offers a potentially lower-cost alternative, it does not have the ability to extensively cover whole communities (it is limited to those that seek out the café), and hence may well prove to be more effective as a supporting tool, or as a reinforcing tool within previous PTP communities.

Links to broader environmental programmes

- 11.13 Evidence from the London, Perth and Melbourne case studies has highlighted linkages between PTP and a broader environmental agenda. Evidence from Perth compares PTP average engagement rates with acceptance rates for a similar exercise in energy management. PTP relating to transport issues has generally achieved around a 50% engagement rate with households (i.e. willing to accept information), with similar exercises for energy management demonstrating acceptance rates of around 80%. This raises the possibility of pooling programmes to 'piggy back' on other areas of environmental improvement.
- 11.14 Further evidence from TfL supports this suggestion. Travel advisors have remarked that, when households realise the purpose of the visit, they often volunteer information about other practices that they employ that relate to a greener lifestyle, for example 'I recycle', especially in the Borough of Sutton, which promotes itself as the greenest London borough. The residents can see the link between sustainable modes of transport, car usage and the effect on, and linkage with, the environmental agenda.

Different message for different parts of the UK

11.15 Evidence from Darlington suggests that people's values and therefore motivators for change are different in various parts of the UK. The Darlington case study raised the issue that using congestion to market PTP did not suit a town like Darlington, or indeed many areas outside the South East of England, as it is not a particularly tangible problem. In Darlington, the sustainable travel-related messages that respondents are more responsive to relate to health, cost, quality time with friends and family, and the environment. This is indeed in contrast to London, where congestion is a serious issue, and in Brighton, where the environmental factor is generally limited to a discussion on carbon footprints.

Impacts on LA departments and other staff.

11.16 The recruitment of new local authority staff in Brighton has had a positive influence on existing staff, helping to create a 'can do' and 'push the boundaries' attitude to transport projects in the city. The integration of information between the Nottingham transport department and the searches team provides a good example of joined-up thinking and working within a local authority.

Car sharing

11.17 The evidence collected as part of his study has highlighted that car sharing is often not heavily promoted as part of PTP. The evaluation findings demonstrate that car sharing generally either decreases (slightly) or remains neutral as a result of PTP interventions.

11.18 Given the strong investment by UK local authorities in area-wide car sharing, and the importance of electronic matching services (demanding high subscription to be truly effective), it would appear that greater opportunity could be made of registering potential car sharers during the 'contact and advice' stage of PTP projects.

Personal journey plans

11.19 The study has identified a number of cases where personal journey plans (rather than generic local guides) have been provided to households. It has not been possible within the study to explore the relative importance of such approaches (or any additional value that might be accrued). In order to cope with the scale of future PTP projects, personal journey planners are likely to be only considered feasible if they can be produced (reliably) using an automated system (with some degree of manual validation). In Nottingham, personal journey plans have been issued to all households across the city (May 2007, as part of the smartcard implementation), and the findings of this work (when reported) should provide a valuable insight into the effect of such an approach (on bus boardings) when delivered on a city-wide scale. Similarly, in North Yorkshire, a semi-personalised personal journey planning system has been developed to map the journey to school for individual pupils, which forms an important part of the school travel planning process.

11.20 A key issue arising from the use of personal journey planners is the need for good, reliable automated journey planner systems (for example as developed by Nottingham TripTimes). Future PTP projects could sensibly be fed by Transport Direct, provided it can be proven to be 100% reliable at the local level (in addition to the local validation issues, further work would be required to be able to batch-process requests for journeys based upon origins and destinations arising). It is also likely that some form of manual checking would be required (possibly at the point of packing the materials pack) to ensure the route suggested is logical and appropriate.

Smartcards

11.21 The future development of a national system (or at least a greater uptake at the local level) of bus-based smartcard payments would potentially enhance the ability of PTP to improve its offer (for example, making the issuing of free tickets easier to administer). It would also improve the availability of corroborative data, as individual trip-making behaviour could be more readily tracked (enabling PTP-influenced trips to be more accurately monitored).

Accessibility planning

11.22 Evidence relating to the impact of PTP and levels of accessibility is limited, and the current delivery of accessibility strategies by all UK local authorities could provide a platform for:

- testing the relationship between PTP and accessibility; and
- creating a future PTP project structure that maximises the networks afforded by the accessibility partnerships (or the Local Strategic Partnerships).

Future markets

11.23 During the course of the study, a number of local authorities approached the study team seeking information and knowledge on the PTP process to inform their future transport strategy and growth area aspirations. A well delivered and heavily promoted best practice guide (produced as an outcome of this study), or a retained advisor available ‘on call’ for local authority advice, should further stimulate interest, and hence it is suggested that there is likely to be long-term and wide-scale future opportunities for PTP in the UK.

‘Locking in’ the benefits

11.24 A key challenge for PTP will be to consider how best to ‘lock in’ the benefits (for example, increasing the physical capacity/priority for pedestrians, cyclists and public transport users in response to measured behavioural change). This would ensure that any gains associated with the PTP intervention are captured in the longer term, and that any latent demand for travel by car (for example resulting from an induced traffic effect) does not erode the benefits gained. This approach was also recommended for consideration by the DfT ‘smarter choices’ research, 2004.

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Appendix: A review of theory and practice of PTP

Theoretical principles of travel behaviour and marketing

There are no universal theories or models of travel behaviour. Many alternative theories originating from different fields have been proposed and reported in the literature. In this section some of the more widely used theories and models are briefly outlined and used as a basis for consideration of PTP. Theories and principles relevant to marketing are also summarised in this respect. Reviews by Jackson (2005), Anable et al. (2006) and Gärling and Fujii (2006) have been drawn upon in this review, and readers are referred to these for more detailed information. After reviewing theories, it is considered how PTP approaches used in practice relate to these. Finally, the findings are summarised from some research studies that have examined in depth the behavioural impacts of PTP-type interventions. This allows some potential insights to be gained on design of PTP.

Theories of behaviour

In Table A1 the main features of behavioural theories and models are summarised and the implications of these for those seeking to influence travel choices are subsequently interpreted.

Table A1: Theories of behaviour relevant to PTP			
Theory	Description	Assumptions	Policy implications
Rational choice theory (RCT)	Decision makers select option which maximises benefits (expected utility) to them.	Decision makers have access to complete information and are fully capable of evaluating it.	Change benefits and cost associated with options.
Bounded rationality	Decision makers seek to achieve a minimum level of benefits (they are 'satisficing').	Decision makers cannot be certain about future conditions and cannot obtain all relevant information.	Provide decision makers with information about benefits and cost associated with options.
Theory of planned behaviour (TPB)	Attitudes towards behaviour, social norm and perceived behavioural control combine to influence behavioural intention which in turn influences behaviour mediated by actual behavioural control.	Behaviour based on conscious evaluation process as with rational choice theory. Beliefs and their evaluation determine attitudes, social norm and perceived behavioural control.	Change beliefs and evaluations of them through (objective) changes to options or through (subjective) marketing. Change actual ability to perform behaviour.
Value belief norm theory (VBN)	Awareness of consequences of behaviour and acceptance of responsibility for consequences influence personal norms which influence behaviour.	Awareness and acceptance are assumed to depend upon personal values. Ignores self-interest and situational factors (that influence behavioural control).	Educate about consequences for others of behaviour and possibility of personally making a difference to these consequences.
Habit	Behaviour that is automatic (non deliberate) and which occurs in response to situational cues.	Habitual behaviour is more likely with repeated behaviour, a stable and supporting environment and behaviour that is rewarding.	Raise awareness of behaviour or change situational context.

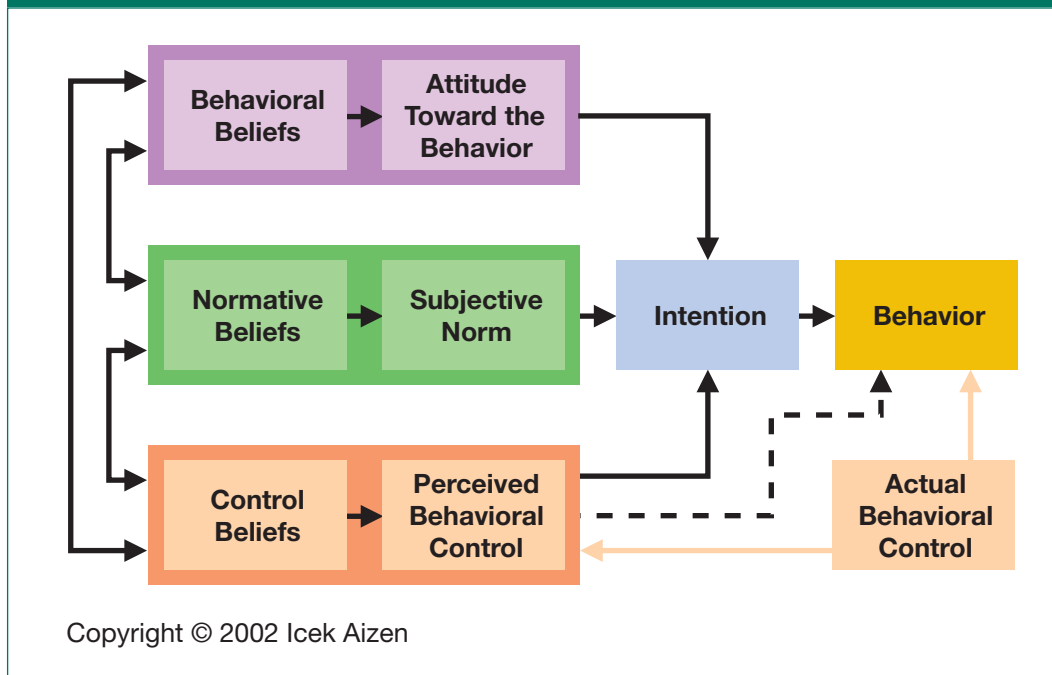
Table A1: Theories of behaviour relevant to PTP *continued*

Theory	Description	Assumptions	Policy implications
Theory of interpersonal behaviour (TIB)	Attitude, social factors and affect combine to influence behavioural intention which in turn influences behaviour mediated by habit and facilitating conditions. Attitude determined by beliefs and their evaluation. Social factors include personal and social norms, role belief and self-identity. Affect determined by emotions.	Recognises social and affective factors (and possible lack of deliberation).	As well as previously mentioned possibilities, change actual or perceived social and institutional conditions of travel behaviour. Change emotional reactions to behaviour.
Self-perception theory	Attitudes are inferred from observations of own behaviour.	Behaviour is antecedent of attitudes, rather than the converse.	Motivating people to try alternative behaviour without changing their beliefs and attitudes towards it can ultimately result in beliefs and attitudes becoming more favourable towards it.
Process model of effects of PTP	Attitude, perceived behavioural control, social norm and personal norm combine to influence behavioural intention which in turn influences implementation intention which in turn influences behavioural change. This process only applies where deliberation occurs.	Recognises that marketing can directly influence all antecedents of behaviour, including behavioural intention and implementation intention.	As well as above, motivate intention and plan to change behaviour directly.

Rational choice theory (RCT), which is based on microeconomic utility maximisation framework, implies that policy makers can only influence people's travel choices by modifying the benefits and costs of transport options (i.e. the objective attributes of options), for example the reliability of a transport mode. 'Bounded rationality' (or satisficing behaviour) implies that informing people of benefits and costs can influence travel choices, for example by providing information on reliability. This may be particularly relevant after a change in the transport system.

Ajzen's theory of planned behaviour (TPB) (see Figure A1) acknowledges subjective determinants of behaviour. Firstly, it implies that policy makers can influence behaviour by changing attitudes towards travel modes. Attitudes could be altered by *emphasising* benefits and costs of modes (e.g. reliability) not previously appreciated and *emphasising* the importance of those benefits (e.g. reliability can alleviate stress). Attitudes can also be altered by changing the benefits and costs. Secondly, the TPB implies that policy makers can influence social norm, for example by information emphasising other people's support for use of a transport mode. It also implies that policy makers can influence behaviour by changing the perceived ability of individuals to perform behaviour, for example through information on where to catch a bus, and the actual ability of individuals to perform behaviour (providing additional bus service).

Figure A1: Theory of planned behaviour



RCT and TPB assume that behaviour results from self-interest. Theories and models such as the value belief norm theory have been put forward to explain altruistic/environmental behaviour and recognise that decisions are not only made with self-interest. They imply that educating people about the consequences for others of their behaviour and encouraging them to feel responsibility for these consequences can influence personal norms and in turn behaviour.

The theories outlined so far assume behaviour is a result of conscious deliberation. Habitual behaviour recognises that behaviour may not be deliberate and implies that engaging decision makers about their behaviour or changing the situational context for the behaviour can be used to cause deliberation of behaviour and therefore potentially a change in travel behaviour.

Triandis' theory of interpersonal behaviour (TIB) is an integrated theory that recognises the factors identified previously, as well as recognising more broadly the social context in which decisions are made. It implies that behaviour can be influenced through changing actual and perceived social and institutional conditions (thereby influencing norms (personal and social), role belief and self-identity). It also implies that behaviour can be influenced by influencing emotional reactions to a transport mode, but how this can be achieved is a difficult question and is probably related to changes to other objective or subjective factors.

Bem's self-perception theory suggests that people infer attitudes by observing their own behaviour. It implies that motivating people to try alternative behaviour without changing their beliefs and attitudes towards it can ultimately result in beliefs and attitudes becoming more favourable towards it. Cognitive dissonance theory supports this by arguing that people avoid internally inconsistent values, beliefs and attitudes and

implies that where a gap between attitude and behaviour exists an adjustment will be made to either attitude or behaviour. This implies behaviour can be influenced by inducing people to try behaviour after which attitude towards the behaviour will become more positive. However, it has been noted that this is only likely where the outcome of the behaviour is positive.

An integrated process model designed specifically for considering PTP is suggested by Gärling and Fujii (2006). It is a model of behavioural change unlike the previous theories, which are concerned with explaining behaviour. It draws on self-regulation theories, which consider the role of goal-setting in behavioural decisions. It is believed that a strong commitment to a goal and the setting of a large goal increase the likelihood of the goal being attained. Setting of a goal can be self-imposed or forced on an individual. Its additional contribution to that of TPB or TIB is that it implies that behaviour can be influenced by directly motivating decision makers to have intention to change behaviour and/or to form implementation intention (or plan) to change behaviour.

Anable *et al.* (2006) conclude from reviewing behavioural theories applied to environmental behaviours that knowledge and attitudes are mediated by many other factors in influencing behaviour. They conclude that changing attitudes is not sufficient to influence behaviour. They suggest a set of factors or barriers to environmental behaviours and organise these into a typology (see Table A2) involving four categories: individual subjective (e.g. values, self efficacy), individual objective (e.g. knowledge, personal capabilities), collective subjective (social dilemmas, group cultures), collective objective (e.g. contextual factors, communication and the media). It is recognised that these factors are inter-related and there are dynamic feedback effects between them.

Table A2: Typology of barriers to travel behaviour change from Anable et al. (2006)

Individual subjective	Individual objective
Values Frames Moral norms Perceived behavioural control Self efficacy or agency Denial Instrumental attitudes Affective attitudes Identity and status	Knowledge/awareness of consequences Habit Personal capabilities Actual resource constraints
Collective subjective	Collective objective
Social dilemmas Group cultures/shared norms Trust in others and in government	Contextual/situational factors Communication and the media Nature of climate change problem

Theories and principles relevant to social marketing

Jackson (2005) notes that successful persuasion has traditionally been said to be a function of credibility of source, persuasiveness of arguments and responsiveness of the recipient. The elaboration likelihood model (ELM) is a theory of attitude change which differentiates between the peripheral route and the central route to information processing, with the former based on simple inferences and latter based on critical evaluation. It has been suggested that central route processing is more likely to lead to enduring change in attitude and requires the decision maker to be motivated and able to engage with message. However, peripheral processing (e.g. association of celebrity with behaviour) can lead directly to change in behaviour without critical evaluation and can be sustained as long as positive experience results. It is suggested that attention to target audience is important to gain personal involvement regardless of which route is used for messages.

If the information approach to persuasion is to be used, then the problem has been noted that too much information can induce helplessness in recipients and therefore have no effect on attitudes or behaviour. This has been found in relation to environmental behaviour. Kaplan has suggested therefore that a participatory approach should be used where people are helped to understand the problem and invited to come up with solutions to it.

It has also been noted that attitude and behaviour can change without assimilation of a persuasion message. For example, people prefer consistency in values, attitudes and behaviour and highlighting inconsistencies (e.g. can be used to change people's behaviour (this draws on cognitive dissonance theory).

Drawing together the above, Bator and Cialdini suggest successful persuasion messages require:

- emotional, imaginative appeal;
- immediacy, directness and relevance;
- use of commitments (e.g. badges, loyalty schemes) to signal involvement;
- use of retrieval cues so that people can be prompted to recall message.

As an alternative to conversational approaches to persuasion, it has been argued that people change behaviour from trial and error, observing what others do and observing other people's responses to their own behaviour. Bandura's social learning theory suggests that behaviour is explained by continuous reciprocal interaction between cognitive, behavioural and environmental influences. In other words, behaviour is influenced by learning from others as well as personal experiences. The theory also suggests that we learn most from those we identify with, implying the use of role models to convey knowledge and skills.

Social capital theory suggests that society's social interactions are shaped by social capital (networks, norms, relationships, values and informal sanctions). It implies that social capital (e.g. perception of trust and participation in organisations) influences policy outcomes and hence the importance of the organisations involved in PTP being able to be trusted and perceived as part of the community.

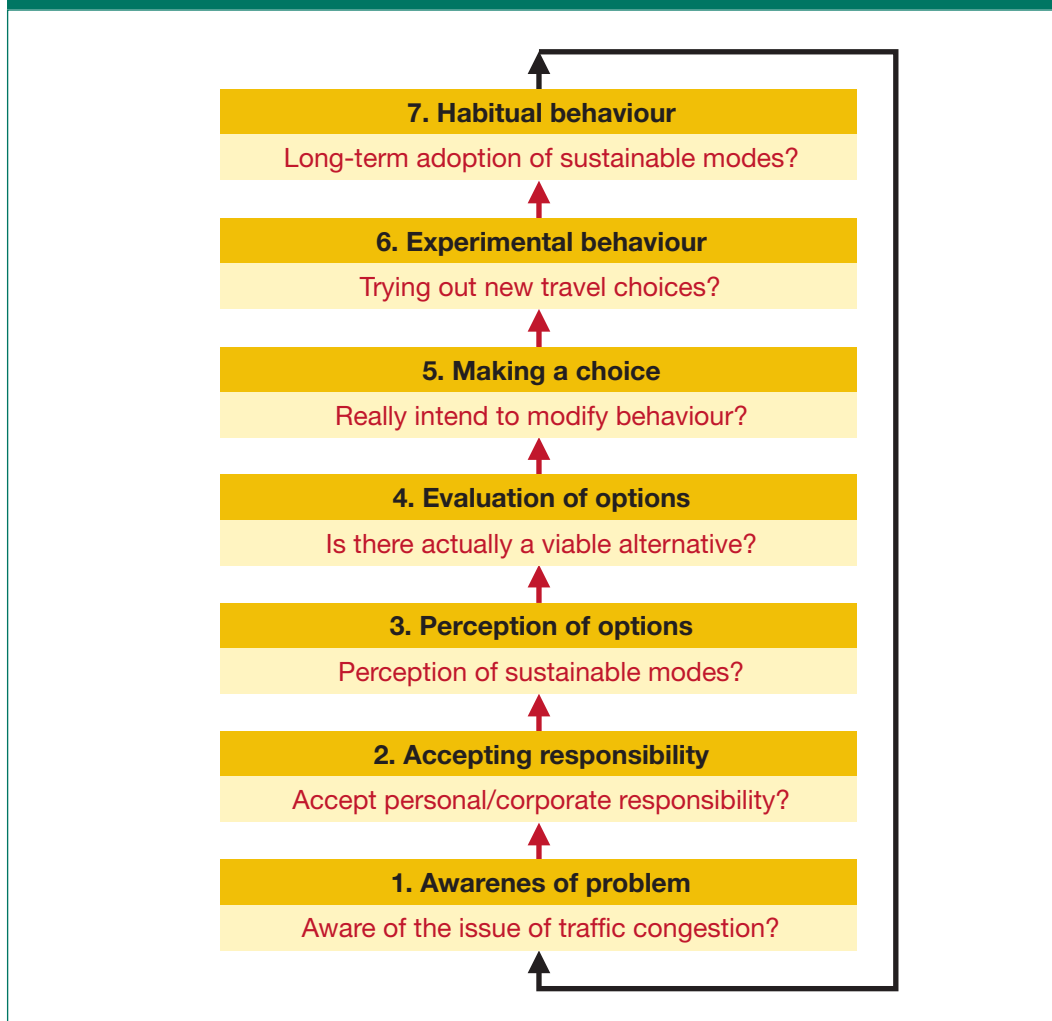
Turning to how principles of persuasion can be used in behavioural change campaigns, various approaches have been put forward (e.g. Lewin's change theory) which in common recognise the importance of 'unfreezing' existing behaviour patterns (habitual behaviour) and discursive elaboration of new behaviour patterns leading to these becoming new behaviour patterns. Recognising the importance of social norms, these approaches suggest a group or community environment assists this process.

The transtheoretical model is a model of behavioural change that adopts aspects of this approach. It suggests that a change in behaviour occurs by moving through five stages of readiness from pre-contemplation through to contemplation, preparation, action and maintenance. It applies to intentional behaviour change. It is not explicit about *how* to influence movement between the stages and needs to draw on other theories of behaviour for this. Depending on stage in which people are currently located, they can be targeted differently. The Tapestry 'Seven Stages of Change' model (Tapestry, 2005) (see Figure A2) is derived from the transtheoretical model and is designed to be applied to travel behaviour change.

Social marketing is 'the systematic application of marketing concepts and techniques, to achieve specific behavioural goals, for a social or public good' (NSMC, 2006) and it draws from many of the principles described above. The following concepts and principles are suggested to be core to social marketing (ibid.):

- customer or consumer placed at the centre and recognising their social context;
- focus on achieving clear behavioural goals and understanding steps needed to move towards these;
- developing insight into why people behave as they do, recognising influences and influencers and what people think, feel and believe;
- segmentation using psychographic research;
- understanding factors (internal and external) competing for people's attention and ability to change behaviour;
- an 'exchange' involving offering something that will be valued and recognising any cost involved in accepting it;
- appropriate selection of intervention mix and marketing mix.

Figure A2: Tapestry 'Seven Stages of Change' model (Tapestry, 2005)



Kurani considers that social marketing involves a six-step process of listening, planning, structuring, pre-testing, implementing and monitoring. Jackson (2005) suggests that community-based social marketing can be more effective than individual-based social marketing, since changing behaviour is easier within a supportive community. A community-based approach can be conducted at different scales including the household.

Segmentation is recognised as offering the potential for better targeted use of resources and more effective delivery in marketing. Anable et al. (2006) argue that psychographic methods (based on attitudinal and aspirational profiles) offer advantages over socio-demographic or behavioural based segmentation of travellers. Seven travel segments have been defined from a Scottish survey of travel awareness. It is argued that priority should be given to targeting the most amenable segments, and that it may be most productive to encourage those already using alternatives to car to do so a little more, to encourage experimentation with alternatives by those expressing willingness to try these and to increase awareness of those with no apparent inclination.

A difficulty of this approach is identification in which segments people belong without initial research. A further concern currently with segmentation based on cross-sectional data of current attitudes/behaviour is that it may not be helpful in inferring what change in behaviour could occur. With further research on this (involving monitoring of pilot studies) this concern could be addressed.

How current PTP approaches relate to theory and principles

The TravelSmart®/IndiMark approach¹³ focuses on providing access to personally-relevant information, advice and support about travel options. It is based on the hypothesis that many people have become habitual car users and are unaware of alternative travel options available and would be encouraged to use alternatives if more aware of them. It is based on offering a set of information from which people can choose and interpret for themselves, rather than seeking to present them with messages to persuade them to change their behaviour.

TravelSmart/IndiMark can be summarised as involving the following behavioural 'levers':

- inducing deliberation of behaviour through the profile of initiative itself, personal contact and offer of materials;
- explicitly reinforcing positive behaviour through gifts (which might be expected to have positive effect on social norm and affect associated with behaviour);
- implicitly changing beliefs and attitudes ('perceptions') associated with travel options through offering choice of information so that participant can select relevant information and evaluate it;
- explicitly encouraging trial of positive behaviour through incentive (which may subsequently lead to change of beliefs and attitude);
- explicitly increasing perceived and actual behavioural control to carry out positive behaviour through personal advice and support;
- implicitly encouraging mutual support within household (and potentially within community) of behavioural change through a household-based approach nested within a community (which might be expected to have positive effect on social norm).

TravelSmart/IndiMark seeks to initiate deliberation of behaviour and influence beliefs and attitudes. It can be considered to explicitly address individual subjective factors (instrumental attitudes, perceived behavioural control) and individual objective factors (habit, personal capabilities) that determine behaviour. It also implicitly addresses social norms in various ways. It could be suggested that the TPB and theories of habitual behaviour are the most relevant behavioural theories for IndiMark.

¹³ TravelSmart is a trade mark registered by Sustrans for use in the UK describing PTP initiatives undertaken with Socialdata using the latter's IndiMark method.

In terms of persuasion, TravelSmart/IndiMark adopts an approach of seeking to 'unfreeze' existing behaviour and induce discursive elaboration of new behaviour. It seeks to achieve central processing of information without generating information overload. It involves personalised contact but is rooted within communities. It seeks to engender trust in the organisations involved. It includes some attention to core aspects of social marketing but not all are involved (behavioural goals and steps) or are fully addressed (psychographic research-based segmentation).

The Steer Davies Gleave approach to PTP has been employed in Bristol and Darlington and informed the approaches taken in Brighton and London. It involves personal contact with individuals in target areas by travel advisors and engagement of participants in a short, door-step conversation. The travel advisors are trained to listen out for characteristics of travel needs and behaviour, as well as key motivators, and to determine what type of message and information is relevant to the participant. At the end of the conversation it is mutually agreed what information and incentives are to be provided.

In Darlington, PTP participants could also join a loyalty club (Local Motion Club) involving pledge card, newsletters, challenges and incentives. The loyalty club is aimed at reinforcing the impact of the initial conversation and package of information and incentives. In the newsletter stories about the positive behaviour of members of the community are reported (which may be expected to act to alter social norms).

The Steer Davies Gleave approach can be summarised as involving the following behavioural 'levers':

- inducing deliberation of behaviour through the profile of initiative itself, personal conversation and offer of materials;
- implicitly changing beliefs and attitudes ('perceptions') associated with travel options through suggesting relevant information for evaluation;
- explicitly encouraging trial of positive behaviour through incentive (which may subsequently lead to change of beliefs and attitude) and challenge;
- explicitly increasing perceived and actual behavioural control to carry out positive behaviour through personal advice and support;
- implicitly encouraging mutual support within household (and potentially within community) of behavioural change through a household-based approach nested within a community (which might be expected to have positive effect on social norm);
- explicitly reinforcing positive behaviour through loyalty club (which can have positive effect on social norm and affect associated with behaviour).

There are a number of commonalities between the TravelSmart/IndiMark and Steer Davies Gleave approaches. One difference of emphasis between the two approaches is that the travel advisors used in Steer Davies Gleave PTP seek themselves to identify appropriate resources relevant to the participant, whereas in TravelSmart/IndiMark participants are provided with a menu of information from which to select. What appears to be a convergence of PTP in UK to a common approach in many respects may be considered to be a consequence of learning what is effective from past experience (for example, in achieving high participation rates) and/or a consequence of common requirements from clients.

There have been varying degrees of pre-project publicity used to raise awareness of PTP projects, regardless of approach. These have often been informed by travel behaviour surveys (or focus groups in the case of London) for the area concerned. For example, publicity has been used to emphasise the local improvements possible if fewer short journeys are made by car. This example suggests that there can be opportunity to increase the self-efficacy or agency of residents to make a difference to their lives through travel behaviour choices.

Projects have also varied in the amount of wider travel awareness work conducted alongside PTP, as well as the use of community groups and events to publicise projects and recruit participants. These can assist in influencing the community subjective factors identified by Anable et al. (2006) that can act as barriers to behavioural change.

Looking at PTP approaches used elsewhere, Cooper (2007) describes results of community-based social marketing PTP projects in different areas in King County, Washington State, US. The projects are notable in embedding their activities within the community context, involving use of posters/signs, project participation website and links with local businesses. A core component of the projects was requiring participants to pledge to reduce car alone trips during a 10–14 week project period. Rewards (travel vouchers, 'Count Me In' signs) were given for successful achievement of the pledge during the project period. Feedback from participants indicated the initial pledge was the primary motivator for a change in behaviour and timely feedback on their performance against the pledge supported their continual engagement. Reductions in car alone trips of between 24% and 50% have been reported in different areas for participants. Telephone surveys suggest though that only between 6% and 10% of persons receiving project mailings have responded to the project and pledges have been offered from three-quarters of responding persons. It is possible, of course, that behavioural impacts have spread more widely than project participants and bus-boarding counts have shown positive impacts in project areas.

DHC (2005) reports a PTP project in south-east Liverpool which has paid close attention to behaviour theory and research elements of social marketing. The emphasis in project was on changing perceptions. It is assumed perceptions adjust to experience, and therefore experimentation with travel options should be encouraged where there

is most scope for perceptions to be adjusted positively. The project used previous research and a new interview survey to study transport mode perceptions. This resulted in saving money and improving health being identified as 'constructs' to use as foci in the project given that potential for these to be perceived positively for alternatives to the car was high.

Recognising that people have more trust in messages from trusted sources, the project used local community organisations, local newspaper and local businesses to distribute leaflets containing information, motivation and invitation to participate in project. Those people responding were sent a questionnaire on their travel attitudes and behaviour and this was analysed in order to segment them into six attitude groups based on previous research by Anable (Anable et al., 2006). Different marketing approach was used for each group and information and advice was tailored to individuals based on a journey reported in travel diary. Journey plans (in Healthy Travel Packs) were provided to 115 households.

It was found that 543 people (2.9% of the population) actively sought participation in PTP project. Evaluation of individual responses measured through follow-up questionnaire to those receiving Healthy Travel Packs suggested 0.4% of the population of the area (77 people) reported that they intended to maintain a behavioural change to a journey that had been recommended to them. This project raises the question of whether an approach that involves careful individualised analysis may result in large positive impacts for the participating individuals but have limited potential to directly engage a large proportion of the population. What could be most relevant to find out is the level of impact on the behaviour of non-participants.

Reference should also be made to past PTP approaches and experience from these. The Living Neighbourhoods/Living Change approach of Steer Davies Gleave focused on entering into conversation with households to discuss the problems they face relating to transport and inviting them into dialogue to solve them. Solutions could involve supplying information, journey plans and incentives. Travel Blending which sometimes formed a part of this involves members of household completing seven day diaries after which advice is given on reducing overall travel, and then these ideas are practised and further diary completed. The philosophy is that an achievable goal can be set rather than vague exhortation. This approach demands a high degree of engagement (required from both project staff and participants) and hence it has not been extensively proven as to whether it is feasible to serve and engage high proportions of the population.

In PTP projects in Japan (Fujii and Garling, 2006) it is reported that some projects have asked participants to make car reduction goals, and these have shown larger impacts on car use. It has also been found that asking participants to make implementation plans to change their behaviour results in larger impacts than when this is not requested. These impacts apply to project participants, and it is not reported whether the extra burden (and possibly perceived imposition) associated with setting

goals and plans compared to other PTP projects results in lower participation rates.

Insights on behavioural change from research studies

A brief review is provided of findings from in-depth research studies seeking to test the behaviour theories outlined previously and in some cases involving PTP-type interventions. This can indicate which behavioural factors are more likely to be important determinants of behaviour and are amenable to influence and can therefore inform on design of PTP.

Bamberg, Ajzen and Schmidt (2003) studied the impact of a prepaid bus ticket on bus use of 580 students at the University of Giessen, Germany. Analysis of bus intention and use before (two months) the intervention and after (eight months) the intervention showed that the intervention influenced attitudes, social norm, behavioural control, intentions and behaviour towards bus use and supported the TPB as a model for explaining behaviour both before and after intervention. It also indicated that a measure of past behaviour helped explanation of bus use before the intervention but not afterwards, indicating the intervention changed the decision context. A measure of habit was not found to mediate the effect of past behaviour on current behaviour before the intervention, and it is concluded that mode choice is a deliberate decision.

Fujii and Kitamura (2003) monitored the effect of a one-month free bus ticket on a sample of 23 car drivers and compared it to monitoring of a sample of 20 drivers in a control group. Surveys before, immediately after and one month after the intervention showed for the experimental group attitude towards bus and use of bus increased and habit to use car decreased, although these changes were lower in magnitude in the second 'after' survey. Given the small sample sizes, statistically significant results were not obtained.

Garvill, Marell and Nordlund (2003) studied the impact of awareness raising information in Umeå, Sweden, on an experiment group of 66 participants and control group of 54 participants. The information was included as part of the travel diary survey instrument and included prompting to consider the situational context of planned journeys and the alternatives to the car available. The findings from this study were that no change occurred in the relationship between attitude and behaviour (expected to become stronger), the relationship between habit and behaviour (weaker relationship expected) but that decreased car use was found for experimental group and especially those with strong habit to use car. It is suggested that this impact may have been due to those with strong habits having been influenced by specific situational factors or specific situational attitudes. It is concluded that breaking habits is important and increasing awareness of alternatives for specific journeys can achieve this (and it is hypothesised therefore that actual objective changes to situational factors would be effective).

Beale and Bonsall (2007) report the results of two controlled trials involving bus marketing by post in West Yorkshire. The first trial aimed at

a range of people was designed to address mis-perceptions of the attributes of bus and car (that had been found in another study) and involved a standard letter, leaflet and route and timetable information pack. Results showed no substantial overall difference in the change in attitudes and behaviour for the treatment group compared to the control group (declining trend in both cases) and some indication of positive effect on frequent users and females and negative effect on non-users and males. It is suggested that the marketing aligned with the positive beliefs about the bus of frequent users (such that they identified with the message) and had the opposite effect on non-users. A second marketing intervention was conducted specifically aimed at infrequent or non-bus users, and results suggest lowered attitude ratings but increased bus use. It is suggested that this incongruence between attitudes and behaviour may be explained by the role of self-identity, where the marketing intervention succeeded in enabling non-bus users to accept the bus in relation to their values or goals even if their perceptions did not become more positive. Conclusions from the study are that there are limitations of using a standard marketing approach and differences in beliefs, attitudes, self-image, aspirations and ways of thinking and processing information should be recognised.

Taniguchi and Fujii (2007) tested the impact of PTP to motivate use of a pilot community demand responsive bus service in Obihiro, Japan. PTP took the form of an advertising leaflet, two free bus tickets (valid for one month) and a household questionnaire survey which included a behavioural plan sheet. The latter requested the recipient to write down an implementation plan to use the bus service. A second survey was conducted two months after the first survey. Compared to a control group, the results showed that the self-reported frequency of use of the bus service of the experiment group was statistically significantly higher and this was sustained for the month after the free bus ticket was valid. The after survey asked respondents whether they had recommended use of the bus service or been recommended use of it. It was found that receiving a recommendation increased use of the bus service and that use of the bus service increased likelihood of recommending it. This suggests the importance of word-of-mouth communication in promoting use of new public transport service and that explicit encouragement of this may have potential value in PTP design.

There appear to be mixed findings from these studies. Some studies (Bamberg, Ajzen and Schmidt, 2003; Fujii and Kitamura, 2003) suggest that the TPB explains well the behavioural effect of PTP-type interventions (involving information and incentives) with change in attitude, etc. associated with change in behaviour. However, findings from Garvill, Marell and Nordlund (2003) and Beale and Bonsall (2007) show behaviour change occurring without attitude change when people are provided with information or incentive that addresses a relevant specific journey. It is unclear whether change will be sustained though if a positive attitude towards behaviour does not develop. Taniguchi and Fujii (2007) provide insight that word-of-mouth communication can play a role in bringing about behavioural change amongst a community.

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