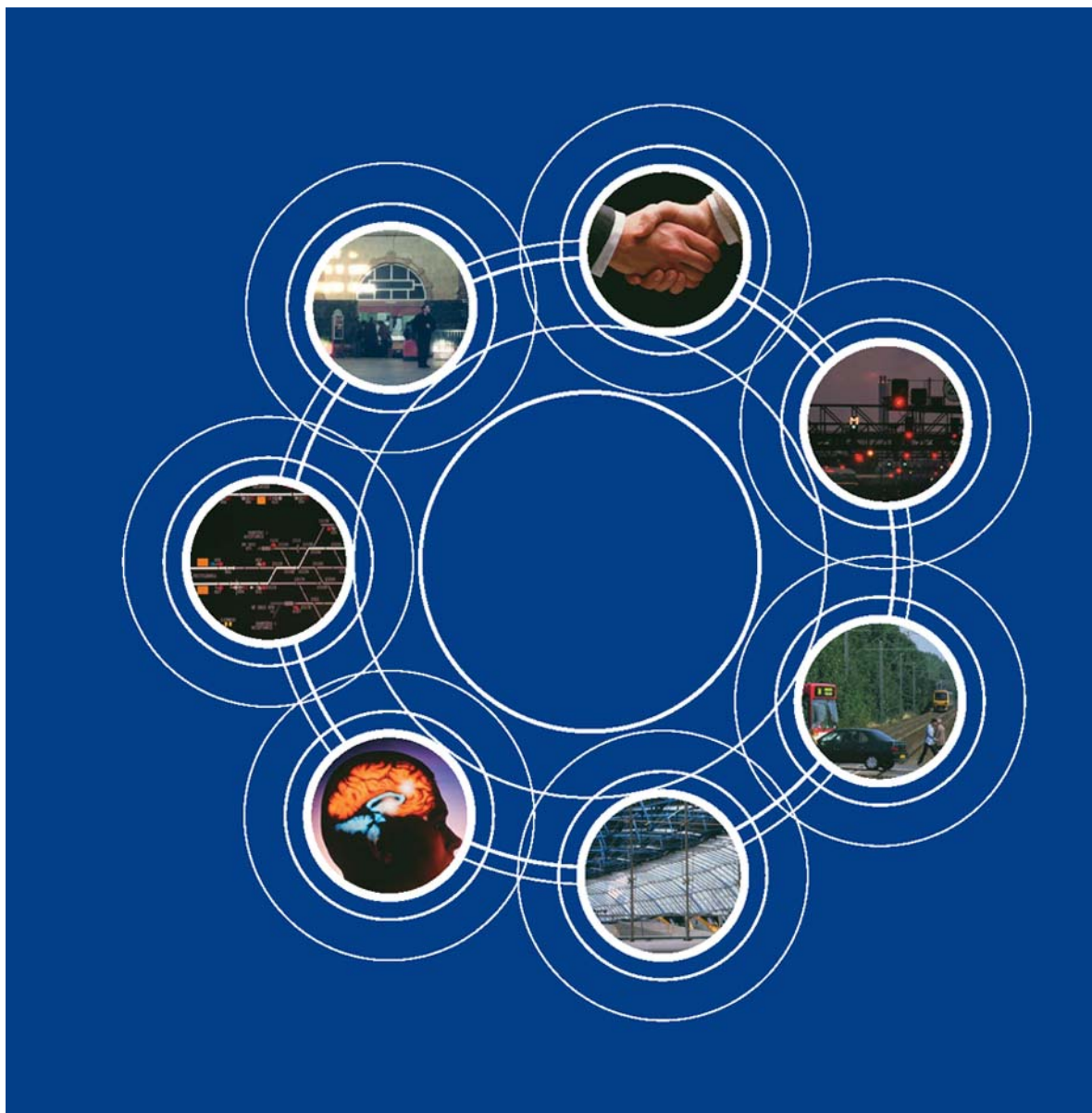




Research Programme
Operations and Management
Evaluation of the pilot programme of
Station Travel Plans



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Evaluation of the pilot programme of Station Travel Plans

Executive summary

Objectives

This report presents the results of an evaluation of the ATOC and RSSB pilot programme of 24 Station Travel Plans (STP) covering 31 stations, which started in 2008. In 2011, TRL and The Railway Consultancy were commissioned to carry out an evaluation of the pilot programme. The objectives of the study were to:

- 1 Determine whether the pilots have been successful in delivering the four main objectives of the programme, (modal shift, increased patronage, CO² reduction and improved customer satisfaction)
- 2 Determine why the pilots have (or have not) succeeded
- 3 Produce clear guidelines for how to develop successful Station Travel Plans going forward
- 4 Provide guidance to RSSB and its members on whether and how to use Station Travel Plans as a partial measure for the industry's performance in providing an end-to-end journey

Research approach

The study involved the following main sources of information:

- Passenger surveys conducted in Autumn 2011, with a baseline survey conducted in Autumn 2008
- Analysis of ticket sales data from the rail industry LENNON database
- Information from STP partnerships, covering measures implemented, wider benefits, qualitative feedback on the process, and any local monitoring undertaken
- Data from the National Passenger Survey (NPS)

As a result of differences in the composition of the samples obtained in the baseline and follow-up surveys, it was not possible to draw robust conclusions on modal shift from the surveys alone. Instead, survey evidence was interpreted in conjunction with other sources of data, including local counts of users of different modes, where available.

Objective 1: whether the pilots met the objectives for the pilot programme

Modal shift

When evidence of the use of different modes from a number of different sources was combined, it was concluded that there was:

- Good evidence of increased cycling at 12 stations (with at least one indicator of growth at eight others)
- Significantly increased bus patronage at three stations (with at least one indicator of growth at 11 others)
- Good evidence for increased walking at two stations (with at least one indicator of growth at 11 others)
- Increased uptake of PlusBus at stations promoting it, in comparison to the national trend

Given problems with the data sources, it is plausible that considerably more stations achieved success with particular modes than is reported here.

There is evidence for increased car use at stations where there were large increases in car parking provision. However, these stations also showed substantial growth in patronage (for a range of reasons). Combined patronage and modal shift data indicated that, in terms of absolute numbers, use of sustainable modes may have increased as well.

Station patronage

Of the 26 stations where there was at least some form of control data, 16 of the STP stations had shown patronage growth that was greater than their 'control' stations (a group of stations in the same region identified as comparable because they would be subject to similar trends). However, in many cases, there would have been additional or confounding local factors affecting patronage, including changes in rail service provision, changes in the station catchment etc.

Passenger satisfaction

There is good evidence that many of the STPs had been successful at increasing satisfaction with some of the access modes. According to at least one of the two measures used: 15 stations experienced statistically significant increases in satisfaction with connections to other forms of public transport;

eight stations experienced statistically significant increases in satisfaction with cycle parking; and ten stations experienced statistically significant increases in satisfaction with car parking.

CO₂ reduction

Specific estimations of CO₂ reductions were not possible in this study. However, carbon dioxide emission reductions are likely to have occurred, either where station travel plans have encouraged a change to a more sustainable access/egress mode; and/or where station travel work has achieved a switch from an all-car journey to a journey which is at least partially conducted by train.

Wider impacts

The pilots have demonstrated that STPs can be an effective tool for helping TOCs and local authorities to deliver sustainable transport measures that improve station access. In particular, they can act as 'the glue that brings initiatives together' - helping to co-ordinate and maximise the benefits of a number of other programmes taking place, as well as delivering initiatives in their own right.

Stakeholders reported that participation had improved communication between stakeholders, enabling better coordination of activities and improved cost-effectiveness. Many STPs had been successful in securing funding from a range of external sources. STPs had helped with other partnership initiatives, for example a Community Rail Partnership. Stations had also achieved high profile recognition for their work, including awards and positive press coverage.

Objective 2: lessons learned on why pilots succeeded or not

Successful initiatives

The following types of initiatives were found to be the easiest to implement successfully:

- Cycle facilities
- Marketing, information and communications initiatives
- Small scale pedestrian improvements

Some stations had achieved considerable success with other measures, such as improvements to bus services and facilities. However, many larger scale schemes proposed in the original action plans have not yet been completed, so the STPs would be

expected to show greater impact if assessed over a longer timescale. Delivery was also constrained by changes in the availability of local authority resources. A list of factors were identified which contribute to achieving successful outcomes, and which should be used in the selection of sites for future STP implementation, and in the processes of managing and implementing initiatives.

Objective 3 Guidelines for the rail industry in taking forward STPs

It is clear that the stations involved in the STP programme have managed to implement an impressive range of initiatives, and that, in a number of cases, there have been very positive outcomes. Meanwhile, the challenges of evaluating such programmes in a robust way should not be underestimated and further research is needed to develop good practice in this area.

The lessons learned from the successful initiatives identified in the pilot programme lead to a number of strategic recommendations for implementing STPs in the future:

- The success of station travel plans depends on initiatives being tailored to local needs and circumstances.
- TOCs should, in partnership with local authorities, develop an overall 'station access strategy', based on an assessment of all their stations. In many cases, this will not require a full STP approach - but should include the basic principles of information sharing, and a consideration of whether the quicker and easier measures for improving sustainable access identified here are appropriate, and can be readily implemented.
- A selected group of those stations best meeting the success criteria for STPs identified in this study would be taken forward for full STPs, with objectives based on local needs and priorities, and using the best-practice processes outlined in Sections 10 and 11.
- Given the methodological difficulties identified with using passenger surveys to measure modal shift, (as well as their cost), where evaluation activities are considered useful and appropriate, STPs should develop targets, and conduct monitoring using the Site Audit and local indicators that can be collected relatively easily and frequently. Evaluation strategies should be agreed in parallel with action plans.
- STP timescales should be linked to the duration of the franchise, rather than expecting delivery over the much

shorter timescales available to the pilots, making it more realistic for more ambitious schemes to be achieved.

More detailed recommendations on future implementation are set out in the later sections of this report. It is recommended that the existing ATOC Station Travel Plan toolkit is updated in line with the lessons learned from this study, with inclusion of qualitative guidance on issues such as processes and selection criteria.

Objective 4- the use of STPs as an indicator of performance in delivering the end-to-end journey

It is clear that the pilot STPs have been able to deliver a range of measures that support the end-to-end journey, and that the partnership that they facilitate with local highway authorities can be particularly helpful in generating improvements in, and information about, access/egress modes. However, a full STP may not always be the most appropriate method for delivering improvements, and may not be needed at all where the end-to-end journey is already well provided for. It is therefore recommended that performance in delivering end-to-end journeys is considered in relation to the development of overall station access strategies, with STPs being seen as one core component for delivering change through targeted improvements in favourable circumstances.

Glossary of terms and abbreviations

ACR	Accrington
AFK	Ashford International
BPW	Bristol Parkway
CFR	Chandlers Ford
CLN	Chapelton
COL	Colchester
DAR	Darlington
DBY	Derby
DIG	Digby and Sowton
DHM	Durham
ESL	Eastleigh
HAT	Hatfield
HAZ	Hazel Grove
HBD	Hebden Bridge
KNN	Kings Norton
LMS	Leamington Spa
LDS	Leeds
LBZ	Leighton Buzzard
LBO	Loughborough
MKC	Milton Keynes Central
ROM	Romsey
SHT	Shotton
SOC	Southend Central
SOV	Southend Victoria
SAA	St Albans Abbey
SAC	St Albans City
SDN	St Denys
SOT	Stoke-on-Trent
TRU	Truro

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Evaluation of the pilot programme of Station Travel Plans

1 Introduction

This report presents the results of an evaluation study conducted to assess the impact of the pilot programme of Station Travel Plans (STP) that has been led by ATOC and RSSB since 2008. The evaluation was conducted by TRL and The Railway Consultancy using information largely collected during late 2011, compared with baseline information from the start of the programme. This report presents the findings of the evaluation and sets out some recommendations for future implementation of STPs by the rail industry.

1.1 Background to the pilot Station Travel Plans

Station Travel Plans are an application of the travel plan concept that has been successfully used in workplaces, hospitals and schools since the mid 1990s. Travel plans vary in approach, but usually have the same common elements:

- Bringing together all the stakeholders with an interest in travel to the site
- Development of a package of measures to encourage alternatives to singly occupied car travel: walking, cycling, bus travel, car sharing
- A combination of both hard (eg cycling infrastructure) and soft measures (eg awareness raising, better information provision)
- Follow a process involving a Site Audit, development of Action Plans, implementation, and monitoring to evaluate impact

A Station Travel Plan can bring together all the stakeholders with an interest in rail stations (rail industry, local authorities, passenger groups, bus and taxi operators, cyclists, walking groups and others) to develop and agree common objectives and a coordinated approach to delivering them. The 2007 Railways White Paper asked the rail industry to work with all relevant stakeholder groups to pilot Station Travel Plans. In 2008 ATOC invited TOCs, Local Authorities, PTEs and Network Rail to propose stations for the pilot programme, and convened a National Steering Group to select the pilots. Over 70 applications were received, of which 24 pilots were selected, corresponding to 31 stations (See Table 1).

Table 1 - The pilot Station Travel Plans

• Accrington • Ashford International • Bristol Parkway • Chapeltown • Colchester • Darlington • Derby • Digby & Sowton • Durham • Hatfield, St Alban's City and St Alban's Abbey	• Hazel Grove • Hebden Bridge • Kings Norton • Leamington Spa • Leeds • Leighton Buzzard • Loughborough • Middlesbrough and Thornaby (withdrew from programme in 2010)	• Milton Keynes Central • Shotton • Southend (Southend Central and Southend Victoria) • Stoke-on-Trent • Three Rivers Community Rail Partnership (Eastleigh, Romsey, Chandlers Ford, St Denys) • Truro
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The selected pilots established partnerships to steer each STP and then worked with consultancy support provided by ATOC and RSSB, coordinated by the Steering Group, to develop their own targets and Action Plans. A 'toolkit' of guidance on surveys and other data collection methods was produced, with passenger surveys and Site Audits carried out at each station to inform the Action Plan and to provide a basis for future monitoring. The toolkit is published on the ATOC website.¹

The objectives/ success criteria for the pilot STPs were defined as:

- Evidence of modal shift from car travel to sustainable modes for travel to / from the stations as a result of the station travel plan
- More rail passengers using the station as a result of the station travel plan
- CO₂ emissions from passenger travel to / from the station reduced as a result of the station travel plan
- Improved customer satisfaction with end to end journeys as a result of the station travel plan

In Autumn 2008, passenger surveys were carried out at all the pilot stations to measure the baseline modal share for travel to (or from) the stations and to obtain qualitative information from passengers to inform the STP action plan. Further information

¹ www.stationtravelplans.com

1.2 The STP evaluation study

was obtained from Site Audits of each station, using a template from the ATOC toolkit, which collected information such as current availability and occupancy of cycle and car parking, numbers of bus services, availability of travel information, and quality of pedestrian and cycle access. The results of the baseline passenger survey and individual action plans, including Site Audit results, are available on the ATOC Station Travel Plans website along with initial progress reports. Since 2009, the individual STP partnerships have been working on the implementation of their Action Plans, regularly reporting on progress to the STP Steering Group.

As a key part of the original STP pilot programme, evaluation was planned for 2011. The agreed objectives of the evaluation were to:

- 1 Determine whether the pilots had been successful in delivering the four main objectives of the programme
- 2 Determine why the pilots had (or had not) succeeded
- 3 Produce clear guidelines for how to develop successful Station Travel Plans going forward
- 4 Provide guidance to RSSB and its members on whether and how to use Station Travel Plans as a partial measure for the industry's performance in providing an end-to-end journey

The expectation was that the evaluation study would build upon the existing work, while conducting a follow-up passenger survey to measure changes in travel behaviour, and carrying out qualitative research and consultation with the stakeholders.

The study involved the following main sources of information:

- Passenger surveys conducted in Autumn 2011, to provide seasonal consistency with the 2008 surveys
- Analysis of ticket sales data from the rail industry LENNON database
- A review of action plans and progress reports
- A consultation workshop with representatives of the STP partnerships
- Interviews with train operating companies (TOCs)
- An online survey of STP partnerships, collecting both qualitative feedback and local data
- Data from the National Passenger Survey

The detailed methodology, findings and conclusions are set out in the remainder of this report.

1.3 Report structure

This report is structured as follows:

- Section 2 outlines the methodology
- Section 3 outlines what the stations did
- Section 4 outlines the issues involved in using the passenger surveys as evidence
- Section 5 outlines the available evidence about changes in patronage
- Section 6 outlines the available evidence about changes in passenger satisfaction
- Section 7 outlines the available evidence about how people get to the stations
- Section 8 describes the lessons learnt about the processes involved in STPs
- Section 9 describes the wider benefits reported from the STPs
- Section 10 sets out the project's conclusions and recommendations on monitoring and evaluation of STPs
- Section 11 sets out recommendations on the future implementation of STPs

The report is supported by a number of detailed appendices:

- Appendix A, tables of individual results for each station
- Appendix B, supporting data and analysis. This provides a summary of the response rates to the survey, some definitions used and analysis of the survey sample biases
- Appendix C, the passenger survey questionnaire used (as laid out by the designers for printing)
- Appendix D, the online survey (as exported from the Smart Survey system)

2 Methodology

2.1 Overview of approach

In order to conduct a quantitative evaluation of the impact of any transport scheme, it is necessary to gain as accurate an understanding as possible of:

- The intervention - can we quantify what has actually changed on the ground? What differences have been made to the availability and quality of different modal choices?
- The direct impact - what changes in user behaviour can be measured?

The study design involved two distinct research streams, which have been brought together in order to draw the final conclusions:

- **Quantitative data**, principally using passenger surveys carried out in Autumn 2011, matching the baseline surveys as far as possible in timing and survey questions, together with data from the National Passenger Survey
- **Qualitative data**, drawing upon a review of existing Action Plans, Progress Reports, other local information and stakeholders opinions of successful practices and barriers to implementation

In addition, rail industry data from ticket sales (LENNON) was used in the analysis to provide information on overall changes in the number of passengers using each station.

During the review stage of the project, it became clear that the existing progress reporting system did not, as a matter of routine, provide sufficient information on changes that had been made to enable the level or timescales of changes to transport provision at each station to be quantified sufficiently for the analysis.

Furthermore, because of limitations that were identified in the ability of the passenger survey data to measure modal shift, it was necessary to put more emphasis on additional data that would provide an indicator of changes in travel behaviour. A request was therefore made, using an online survey tool, to STP partnerships to provide any additional data that might be available locally to quantify changes in provision and levels of use, such as counts of cycle parking availability and occupancy, or information from bus operators on service frequency and patronage.

In the analysis and reporting phase of the project, the results of the quantitative analysis were combined with qualitative

information from the pilot travel plans, to identify which measures had greatest impact, and to draw conclusions on the most cost-effective approaches to delivering station travel plans. Final recommendations for the rail industry are set out in Sections 10 and 11.

2.2 Qualitative research

There were four main elements to the qualitative research elements of the project. The first was a review of all the individual STP Progress Reports and Action Plans, provided by ATOC. This was to provide the project team with a good understanding of the different approaches being adopted by each STP and the initial successes and problems identified. From this initial review, a number of key issues were identified that were used to structure discussion at a consultation workshop for STP partnership representatives held at RSSB offices in July 2011. A further opportunity for discussion was provided at a STP steering group meeting held at the ATOC Integrated Transport conference in Leeds in September 2011; and at a STP Steering Group meeting in January 2012 at which provisional findings from the quantitative analysis were presented.

To gain detailed feedback from TOCs on their experiences with the pilots and lessons they had learned, a series of interviews with TOC representatives was conducted in Summer and Autumn of 2011, using structured questions developed from the earlier review phase and the consultation workshop.

Feedback from the workshop discussions and TOC interviews was then used to develop a questionnaire for an online survey that was distributed to all STP steering groups. The survey, which was also used to request additional quantitative information, as discussed below, asked a series of questions relating to lessons learned from the process, wider benefits that cannot necessarily be quantified, budgets and external factors that affected the STP. The questionnaire is included as Appendix D. A response was obtained for all stations, the majority provided by the local authority representative in the partnership. The results were used to provide the majority of the information available on the outputs of the STPs, as reported in Section 3, supporting information on outcomes, as reported in Section 7, stakeholder feedback on the STP process, as reported in Section 8, and wider benefits in Section 9.

2.3 Quantitative research

2.3.1 Passenger surveys

Passenger surveys were originally intended to be the primary basis for measuring modal split amongst the pilots and many of the individual targets were based upon the modal share as measured by passenger survey. The baseline survey was conducted in Autumn 2008, with the majority of the sample obtained through face to face interviews. At the time this was considered to be the best way to ensure that a good sample size was obtained and is the method recommended in the ATOC Toolkit². Ideally, follow-up surveys would have been conducted using the same method to ensure consistency, as different survey methods introduce their own biases. However, budgetary constraints precluded this approach for the evaluation study, and experience from more recent station surveys conducted for the Southern STPs demonstrated that good response rates could be achieved from self-completion surveys. This is also the approach used for the National Passenger Survey (NPS). There is a further concern that the time required to conduct face to face interviews can discourage people from responding, in particular regular travellers who are likely to plan their journeys to minimise waiting times at stations. It was therefore decided that the passenger surveys for the evaluation study would be conducted as self-completion surveys. Nonetheless, it was expected that the differences between the methodologies for the two surveys would inevitably lead to differences between the samples which would introduce biases. It was therefore expected that re-weighting of the samples might be necessary, This is discussed further in Section 4.

Questionnaires were distributed to passengers by survey staff provided by Count on Us and the respondents returned them by postal paid envelope. The completed surveys were scanned by character recognition software with the results then converted into a spreadsheet for analysis. The questionnaire used is given in Appendix C. It was designed so that it would, as far as possible, be consistent with the baseline survey, for example in modal and journey definitions, and distance bands. However, the questionnaire was shortened considerably to reduce the time required for completion and some other changes were made, in particular:

2 Available from www.stationtravelplans.com

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- Some changes in wording to improve differentiation between access, egress and interchange journeys
 - Adding questions to investigate how those who had changed their mode of travel had previously travelled
 - Revising travel distance bands for consistency with National Travel Survey categories, and specifically requesting postcodes so that GIS mapping analysis can be carried out if desired at a later date

Questionnaires were distributed at each station on one mid-week day, as far as possible at a similar time of year to the baseline survey, so the majority were conducted in October, with some in early November. Difficulties in scheduling surveys meant that some took place up to two weeks later in the year. To help response rates, returned questionnaires were entered into a prize draw to win two £50 rail travel vouchers provided by ATOC. A survey at Leeds in mid November was added to the original survey programme as it had previously been intended that a separate survey would be arranged locally. A separate survey was conducted at Accrington station on behalf of Northern Rail and summary results are quoted in this report. A summary of the survey dates and responses achieved is given in Appendix B2. Issues involved in analysing and interpreting the surveys are discussed in Section 4.

2.3.2 Station footfall data

Passenger surveys can provide information on the modal share of travel to and from the station, however this does not show what has happened to the absolute numbers of travellers using each mode. It is therefore necessary to multiply the modal share by the total number of passengers. Furthermore, one of the objectives of the STP pilot is to increase overall passenger numbers, so information on station footfall was needed. This was obtained through analysis of ticket sales data from the LENNON database, provided by ATOC.

The results of the analysis of station footfall data are presented in Section 5.

2.3.3 Other data sources

Modal data for each station is also available from existing, nationally organised surveys, in particular the National Passenger Survey; however the sample size in any given year is generally lower than that for the baseline survey for many of the stations, so these data have been used principally as a supplementary indicator.

Passenger surveys are not the only way to measure the use of different access modes to stations- information on numbers of people using different modes can be obtained from sources such as:

- On-site passenger counts
- Cordon counts of people entering the station
- Surveys of levels of occupancy of car and cycle parking spaces
- Patronage data from bus operators.

As was noted earlier, this sort of information was collated initially as part of the station Site Audit conducted at the start of the STP pilot process, but was not subsequently routinely monitored or reported consistently through STP progress reports. A request was therefore made to all STP pilots for any additional data that had been collected locally, using an online survey to try to structure results in a consistent format for ease of analysis. This survey was also used to request quantitative information on changes in transport provision, to provide consistent indicators of change for use in the analysis. The survey used is given in Appendix D.

3 Outputs of the station travel plans

3.1 Introduction

This section explores the sorts of changes that were made to change the attractiveness of access to the stations by different modes. The primary source of information used is the online survey of station travel plan partnerships (which, in turn, was developed from the information available from progress reports and action plans). Each mode is discussed in turn, followed by a section exploring what was easy, and what was hard to do.

Throughout the section, stations are grouped by both what they did, and the extent to which they did it – eg 23 had increased cycle parking capacity, of which 13 had at least doubled the parking available. Inevitably, this ‘grading’ is imperfect³, intended for illustrative purposes only.

Throughout this section, numbers given indicate number of stations (unless otherwise stated).

3.2 Cycling

Making changes to improve access for cyclists was a relatively popular measure. Only three stations reported that they had not improved cycle parking in some way, and only five reported that they had not improved cycle access. provides a summary of the types of measures that were implemented, and the number of stations that had implemented them.

3 In many cases, the grading is based on ‘quantity’ – eg how many different things were done. For example, a station which had introduced a secure cycle lock up, CCTV monitoring and cycle lockers would have scored higher on ‘security of cycle parking’ than on which had just done one of those things – even though that one thing (eg installation of a very large cycle compound) should potentially have scored higher. Within the project, it was not possible to make these adjustments.

Table 2 - Changes made to cycling provision

	No change	Minor increase	Moderate increase	Major increase
Number of cycle parking spaces	6	3	7	13
Security of cycle parking	5	11	7	6
Quality of cycle parking	7	5	11	6
Quality of cycle access	5	10	10	4

For cycle parking, 'minor increase' meant an increase of 5-24% in the number of spaces; 'moderate increase' meant an increase of 25-99%; and 'major increase' meant an increase of 100%+.

For security of cycle parking, 'minor increase' meant one type of change made; 'moderate increase' meant two changes made; and 'major increase' meant three+ changes made.

For quality of cycle parking, 'minor increase' meant one type of change made; 'moderate increase' meant two or three changes made; and 'major increase' meant four+ changes made.

For quality of cycle access, 'minor increase' meant one or two types of change made; 'moderate increase' meant three changes made; and 'major increase' meant four+ changes made.

In relation to **cycle parking**, 23 stations reported that they had increased capacity. Of these, 20 had increased parking by 25% or more, and, of those, 13 had at least doubled the cycle parking available.

In addition, they had:

- **Increased cycle security** through providing or improving CCTV surveillance of parking (12); relocating parking to a safer location (12); providing a secure facility (12); or introducing lockers (4)
- **Increasing the quality of cycle parking** by providing shelter (20); putting in more modern stands (15); relocating parking to improve access (10); or improving lighting (9)
- In relation to **cycle access**, the STP partnerships reported that they had:
 - **Introduced cycle route maps** (19)
 - **Improved the signposting** of local routes (15)
 - **Improved cycling conditions**, either by the introduction of cycle infrastructure, such as paths or crossings (16); or via traffic calming and other road safety measures (8)

Other changes reported included the introduction of an electric bike pump (near the ticket office); the inclusion of cycling in more general information and marketing (discussed in Section 3.5); and the inclusion of changes to cycle access and parking as part of more general station redesign work.

As examples:

At Colchester, cycle provision was more than doubled to give a total of 450 cycle parking spaces, including a secure compound of 150 spaces. New dedicated cycle routes have been introduced, together with strategic marketing, including personal travel planning in target areas, posters in stations, and the production and distribution of a 'Cycling to the Station' leaflet.

At Loughborough, cycle provision was increased from less than 20 spaces, to 120 spaces, together with improved information. Ongoing work is leading to further increases, including the introduction of 11 cycle lockers, new cycle crossings and routes into the town and the display of cycling information in the station.

3.3 Buses

Only five stations reported that they had not made any improvements for bus passengers. However, at the same time, fewer than half of the stations had chosen to focus intensively on this mode, and a few stations reported that there had actually been reductions in the number of services serving the station.

Table 3 provides a summary of the types of measures that were implemented, and the number of stations that had implemented them.

Table 3 - Changes made for bus users

	Moderate decrease	Minor decrease	No change	Minor increase	Moderate increase	Major increase
Frequency of bus services ^a	1	0	14	7	1	2
Other improvements			5	11	9	4

- a. Four stations did not provide appropriate information to code them.
 For bus frequency, 'minor increase' or 'decrease' meant a change of 5-24% in the number of bus services serving the station in the morning peak period (0730 hrs - 0930 hrs); 'moderate increase' or 'decrease' meant a change of 25-99%; and 'major increase' meant an increase of 100%+.
 For other improvements, 'minor increase' meant one or two types of changes made; 'moderate increase' meant three, four or five changes made; and 'major increase' meant six+ changes made.

Overall, at least ten stations had seen **increases in the numbers of services** serving them during the morning peak period. Meanwhile, a number of **other improvements in service provision** were also reported. Specifically, 11 stations reported that the number of routes serving the station had increased and six reported that the catchment served by bus services was greater.

In relation to **other improvements**, the stations reported on:

- **Better integration** between trains and buses, including improvements to bus stops and waiting areas (8); improvements to the pedestrian routes between the station and the bus stops (5); changing the bus timetable to enable better connections (5); and rerouting services closer to the station (2)
- **Improvements to services**, including introducing newer buses (13); introducing express services (3); and improving bus priority on the relevant routes (2)
- **New ticketing** (7)
- **Better information**, including bus information displays in stations (15); installing real time information at bus stops (7); and installing real time bus information within the station (2)

Other changes reported included local authority subsidies for bus routes; the introduction of services for particular times of seasonal demand; increasing the capacity of the buses; rebranding and marketing of services by the operator; new restrictions on cars to prevent interference with bus operations; the introduction of electric vehicles; the inclusion of public transport information within wider travel marketing activities; the introduction of integrated ticketing and smart card readers and the introduction of rail information outside the station to assist bus passengers.

A number of stations reported success with introducing and/or promoting PlusBus ticketing, as discussed further in Section 7.

As examples:

At Leighton Buzzard, during the morning peak period (defined by the station as being 0600 hrs – 0900 hrs), the number of services has increased from 13 to 22, and four new bus routes have started to serve the station since the travel plan work began. For example, a new half-hourly service (the D1) from Sandhills to the station has been provided as part of a new development. Several services have been retimed to meet the fast trains to and from London. Bus information has been promoted through the 'Get on track' marketing campaign, and via a personal journey planning service.

At Bristol Parkway, there have been increases in both the frequency of existing services and the number of routes, such that the total number serving the station in the morning peak period (from 0730 hrs - 0930 hrs) has increased from 48 to 54, and the buses serve a wider area than before. The operators have increased the range of period and multi-journey tickets available. In particular, route 73 has been subject to a substantial upgrade, including increased frequencies (to every 12 minutes during the day), the introduction of newer vehicles (including double-deckers) and the introduction of real time information at key stops.

3.4 Walking

Most stations reported that they had made changes for pedestrians. However, the stations varied in terms of the amount of attention given to making it more attractive to walk there. Table 4 Changes made for pedestrians provides a summary of the stations, in terms of the intensity of activity devoted to pedestrian measures.

Table 4 Changes made for pedestrians

Table 4 -

	No change	Minor improvement	Moderate improvement	Major improvement
Changes made for pedestrians	3	12	10	4

'Minor improvement' meant one, two or three types of changes made; 'moderate improvement' meant four, five or six changes made; and 'major improvement' meant seven + changes made.

In relation to **changes made**, the stations reported on:

- **Improved signposting** to local destinations, including maps, way-finding posts etc (19)
- **Making conditions for walking more attractive**, including better crossing facilities (13); improving the street environment via removal of graffiti, trimming vegetation etc (12); improved pavement surface (11); traffic calming or other road safety measures (9); removal of obstructions and clutter (9); and installing dropped kerbs or tactile paving (8)
- **Better security**, including improved lighting (10) and the installation of CCTV (7)

Other changes reported included better information resources (as discussed in Section 3.5); the upgrading of existing subways or footbridges; the introduction of a shared space scheme; and the introduction of split level hand rails. Walking and cycling had often been addressed jointly, particularly in relation to improving key routes into the local centre.

As an example:

At Ashford International, significant changes included improvements for pedestrians in the wider catchment area (including the remodelling of the ring road as part of a shared space scheme); updating signage in and around the station; introducing a walk buddy scheme for commuters; improving pedestrian crossing facilities outside the station entrance, and the reconfiguration of the station forecourt.

3.5 Information and marketing

Few stations reported that they had not undertaken any activity to raise awareness about how to access the station by means other than the car, and many stations had devoted considerable resources to this area. provides a summary of the stations, in terms of the intensity of activity devoted to information and marketing about travel options.

Table 5 - Marketing and information measures

	No change	Minor increase	Moderate increase	Major increase
Information and marketing	4	3	18	4

‘Minor increase’ meant one or two types of changes made; ‘moderate increase’ meant three, four or five changes made; and ‘major increase’ meant 6+ changes made.

In relation to **changes made**, the stations reported on:

- **Better information in the stations**, including posters (19); and leaflets at the station and in other public locations, such as bus stops, local markets etc (18)
- **Better information given to residents** in the local area, including personalised travel information (14) and leaflets distributed to houses in the catchment (9)
- **Campaigns**, in both the local media (14) and via web or email (7)
- **Provision of website information**, separate to the standard National Rail website (11)

Other activities reported included linking up with workplace travel planning activities to encourage employees to try the train; linking with other, more general travel marketing campaigns (both for the local area, and nationally, such as National Liftshare Week); two for one offers, and free taster tickets; and developing a specific ‘station travel plan’ brand. Some stations had held specific walking and/or cycle challenge events, including competitions, guided rides and cyclists’ breakfasts.

As an example:

At Kings Norton, a wide range of promotional activities took place, including a range of competitions and challenges; advertising and information in the station, on the trains, in the car parks and at the bus stops; the distribution of leaflets and maps to local residents (including delivery via personalise travel planning as part of the 'Pershore Road Travel Choices' programme); the development of a website; and work with local press and at local events.

3.6 Taxis

Making changes to taxi arrangements was a less common part of station travel plan activity. Nineteen stations explicitly reported that they had not made any changes to taxi provision – and eight stations did not have a taxi rank.

Of stations that had made **improvements to taxi services** at the station, three had increased the number of taxis serving the stations, and there had also been a number of ways in which the taxi rank had been made more convenient, including moving it closer to the station entrance (3); increasing its capacity (3) and improving access to it (3).

Two stations were offering a **taxi sharing service** to the station. Two further stations reported that there were plans for one, and one reported that they had investigated this option, but decided not to proceed. The taxi scheme at Leighton Buzzard operates as part of the Central Bedfordshire and Luton Liftshare Scheme.

Other reported changes included: more regulation of taxis serving the station; the provision of taxi information by booking office staff; improved signage to taxis; and improvements to taxi ranks as part of wider station forecourt improvement work.

3.7 Drop-off arrangements

In total, nine stations reported that they had made **changes to drop off arrangements**. Alterations mentioned included changes to the layout to provide more convenient dropping off facilities and the introduction of 20 minute bays. In contrast, one station had reduced the opportunities for kiss-and-ride, in order to give priority to bus passengers. In general, understanding the interactions between different categories of road users was considered important.

3.8 Car sharing

A number of stations had promoted existing **car sharing** schemes in the area, and several had participated in National Liftshare Day. At Kings Norton, four dedicated car sharer spaces were

introduced. At Leamington Spa, Chiltern Railways had offered a 'three for free' promotion, whereby cars with three+ fare paying passengers could park for free. At Stoke on Trent, car sharing had been promoted for station staff. At Milton Keynes, both car and taxi sharing had been promoted.

However, some stations reported problems with introducing car sharing.

3.9 Car parking

summarises the changes made to parking – which had included increases in both capacity and in price.

Table 6 - Changes made for car parking

	No change	Minor increase	Moderate increase	Major increase
Number of spaces	21	3	3	2
Parking charges	15	10	4	

For number of spaces, 'minor increase' meant a change of 5-24% in the number of available car parking spaces; 'moderate increase' meant a change of 25-99%; and 'major increase' meant an increase of 100%+. Calculations are based on the combined total of spaces reported for LA, TOC and private parking facilities.

For parking charges, 'minor increase' meant an increase of up to 10%; whilst 'moderate increase' meant an increase of over 10%. Charges refer to the fees in the TOC car park.

For both measures, there were a few examples where there had been reductions in either spaces or charges, but since these were less than 5%, they were coded as 'no change'.

Deciding the appropriate strategy for parking within a sustainable transport strategy is problematic. Clearly, provision of convenient, cheap parking does not encourage the consideration of alternative access modes – and heavy car movements may make conditions unattractive for people using alternatives. However, if the alternative to a car-train journey is car-all-the-way, increasing

parking provision may still lead to overall reductions in environmental pollution.

Parking was also assessed in the opinions survey. Overall, there was agreement that *'managing parking is one of the most effective ways of encouraging people to consider alternative ways of travelling to/from the stations'* (16 agreed/strongly agreed; nine were neutral or didn't know; two disagreed). However, on balance, many people also felt that *'managing car parking is one of the hardest issues to tackle'* (18 agree or strongly agree; four neutral or didn't know; five disagreed). Although this may be true, the fact that nearly half of the stations had still managed to increase parking charges is notable.

One station commented that the impact of parking charges would be very dependent on the income demographic of the station users – and potentially impact more on younger people and/or those on low incomes.

Other changes made

Stations were also asked about other changes which would have affected their use, and how people chose to access them.

Some of these were factors which would have affected overall demand (changes to nearby employment, shopping or housing), or the overall attractiveness of the station (including improvements to facilities, new services etc).

In terms of factors that could affect access choices, the two most commonly reported factors were:

- **Changes made to nearby roads**, including new layouts or junctions, traffic restrictions, bus lanes etc) (11)
- **Local authority marketing campaigns** to encourage the use of public transport or other modes across the whole area (9)

Other factors mentioned included: linking rail marketing with events and the introduction of car club vehicles.

In all cases, construction processes associated with new or redesigned facilities can clearly have a substantial impact on travel choices whilst they are in progress.

As an example:

In Durham, various events take place to encourage people to visit, and the links with the train station are carefully planned. During the annual brass festival, there are performances on the station. During the Lumiere festival, one of the art installations was assembled at the station to encourage rail passengers to feel part of the event as soon as they arrived. For international cricket matches at Chester-Le-Street Emirates stadium, subsidised shuttle coach services operate between Durham station and the stadium, as part of a joint initiative between East Coast, Durham City Council and the cricket club.

3.10 Summary

Figure 1 shows the number of initiatives implemented by each station⁴ This is from a selection of options from the online survey, as detailed in Appendix B.1, and is useful for showing that the effort spent on different modes was variable — and that the balance of effort was different at different stations. However, as discussed earlier in the chapter, it is based on a relatively simple categorisation of measures, which does not take account of quality issues, and should be treated as indicative only.

Overall, most of the station travel plans had chosen to focus on marketing and information, cycling and, perhaps to a lesser extent, walking. Bus use had been a major focus at some, and it had clearly been possible to make very substantial changes to the quality and quantity of bus provision in the right circumstances. Taxis, car sharing, drop-off arrangements and car parking had received less attention, and had, in some cases, been more contentious issues.

⁴ See the Glossary in the executive summary section for the list of station name abbreviations.

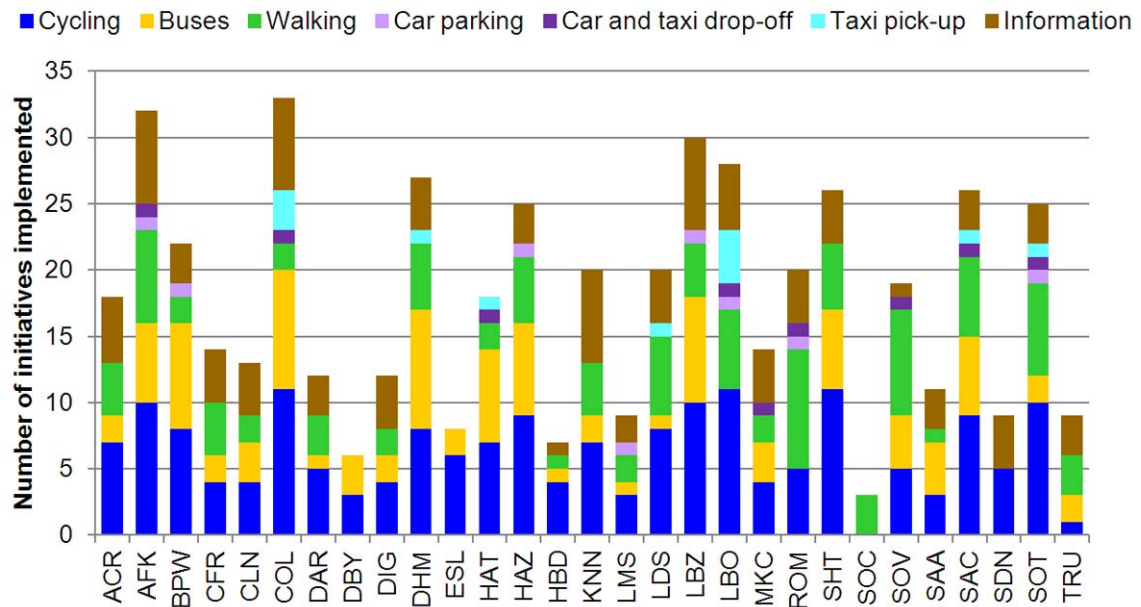


Figure 1 - Number of STP initiatives implemented, by mode at each station
(Data source: online stakeholder survey)

4 Quantitative survey analysis

This section provides an overview of the analysis of the passenger surveys conducted as part of this project. There was a significant difference in the survey methodology used. This seems to have resulted in substantially different sample compositions, with the most obvious differences relating to passenger journey purpose and age. These differences clearly had an impact on the modal share results, and so attempts were made to mitigate for these biases through re-weighting the data. The re-weighting helped correct for some of the biases, but was not fully successful, and was particularly problematic where the sample size for particular groups was negligible. Considerably greater emphasis was therefore placed on alternative sources of data, such as the NPS, NRTS and additional evidence, such as local counts and anecdotal evidence. The results are discussed in the later chapters of the report.

4.1 'Before' (2008) and 'After' (2011) surveys

4.1.1 Methodology, response rates and initial analysis

As discussed in the Methodology, Section 2, the 'Before' Autumn 2008 surveys were predominantly face-to-face interviews, with the exception of Leeds, which was a postal survey. Some stations also had postal or online surveys, but the sample sizes for these were negligible at most stations, and so, after analysis, these were all excluded. The 'After' Autumn 2011 surveys were predominantly postal surveys, with some online responses as well. The survey questionnaire for the 'After' survey is in Appendix C.

The number of postal surveys handed out and the response rates at each station for the 'After' survey are shown in Appendix B2. The sample size for each station, broken down by access, egress or interchange, for both the 'Before' and 'After' surveys are also in Appendix B2⁵. This clearly shows that the vast majority of respondents were those who were accessing the station, with the exception of Leeds, which had a substantial proportion of respondents who were egressing, reflecting its importance as a destination station. All analysis of these surveys therefore relates

5 NOTE: access or egress was not originally captured in the STP 'Before' survey for Leeds; however, an assumption was made, depending on the proximity of the origin postcode or the destination postcode of their journey to the station, using the OS CodePoint database.

to respondents who were accessing the station, except for Appendix B6, which analyses the egress data for Leeds.

Initial comparison of the surveys (aggregating results for all stations) suggested there had been a very substantial increase (of more than double) in the proportion of people driving to the station and parking. The surveys also showed a substantial increase in cycling, with decreases in the other modes. The scale of changes recorded did not seem plausible, or consistent with other information provided by STP partnerships, and the sample composition was therefore investigated further in order to assess whether there were issues.

4.1.2 Survey bias

The two survey samples were analysed in relation to journey purpose, age, employment status and gender. Figure 2 shows the differences in journey purpose and Figure 3 shows differences in age distributions for the total number of respondents across all stations in the two surveys, excluding Leeds. These graphs illustrate that there were very large differences between the surveys; similar differences were present in the individual results for most stations.

Specifically, there was a very large difference in the proportion of respondents who were commuters in the two surveys, changing from approximately 30% to 70% across all stations. There was also a substantial increase in the proportion of those responding who were on company business. This may be because commuters and business travellers are less likely to have time to stop for a face-to-face interview. Additionally, commuters and business travellers tend to be more regular travellers and may have stronger opinions and so may be more likely to fill in a postal survey that has an 'any other comments' box. In addition, although peak hours were not specifically targeted for distribution of the questionnaires, it is likely that responses are biased towards times when the pedestrian flows passing the survey staff were highest. With increased staff resources, it would have been possible to try to increase the response rate in the off-peak, when passengers are more dispersed across the station. However, without detailed information on how passenger flows vary during the day, it would not be possible to ensure any sample was correctly balanced.

There were also large differences in the proportion of younger respondents between the two surveys, in particular in the '16-25'

age group (from nearly 40% to less than 10%). This may be because younger travellers are more likely to stop for a face-to-face interview. This is of particular concern for the evaluation because travellers aged 16-25 are less likely to access the station by car compared to other age groups and so this means that car use is likely to have been significantly under-reported in the baseline survey.

Hence, comparing the two surveys suggests that many of the apparent 'modal shifts' are likely to be a result of changing survey composition, rather than accurately reflecting any real change.

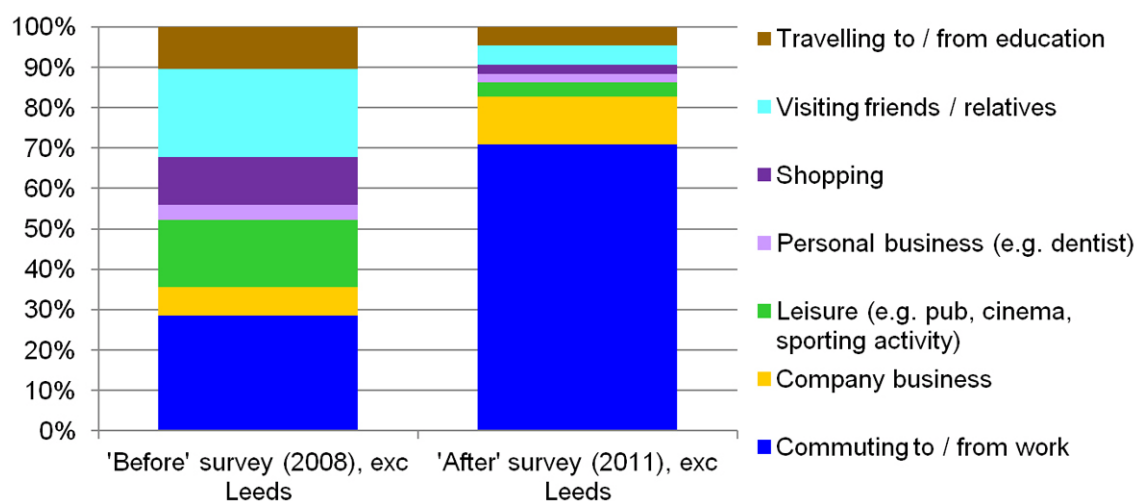


Figure 2 - Journey purpose for all survey respondents accessing the station (Data source: 2008 and 2011 surveys, excluding Leeds)

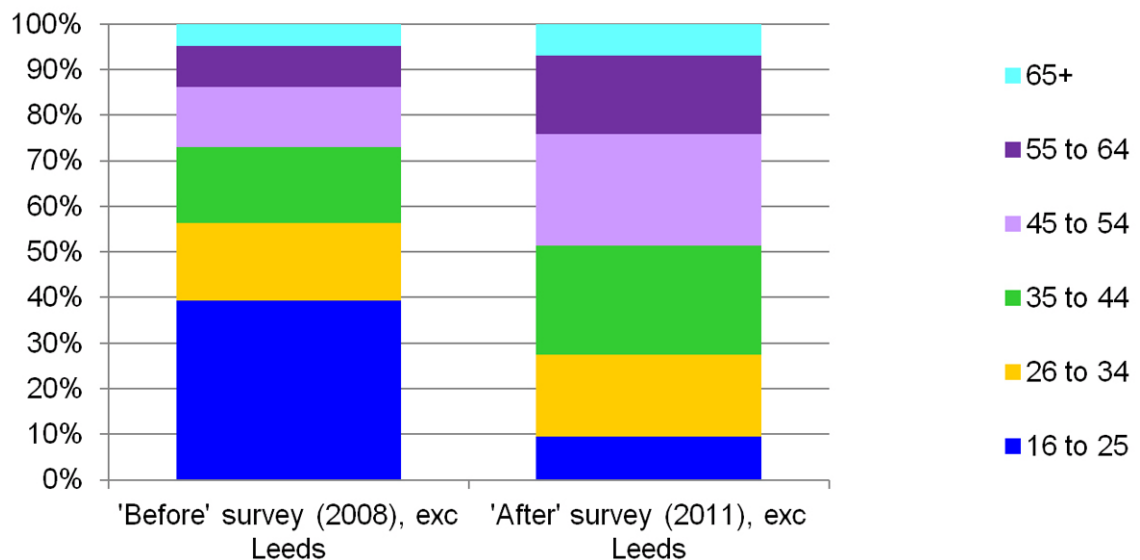


Figure 3 - Age group for all survey respondents accessing the station
(Data source: 2008 and 2011 surveys, excluding Leeds)

4.2 Comparison with other datasets

4.2.1 Car parking modal share

The largest discrepancy between the surveys related to the modal share of 'car parking' (ie passengers arriving by car and parking their vehicle at the station). This was investigated further by comparing the results with other datasets that were available. Data from the National Rail Travel Survey (NRTS) and also the National Passenger Survey (NPS) were analysed for comparison. As an example, Figure 4 shows this comparison for Milton Keynes Central. This information is provided for all other stations in Figure B3 in Appendix B2.

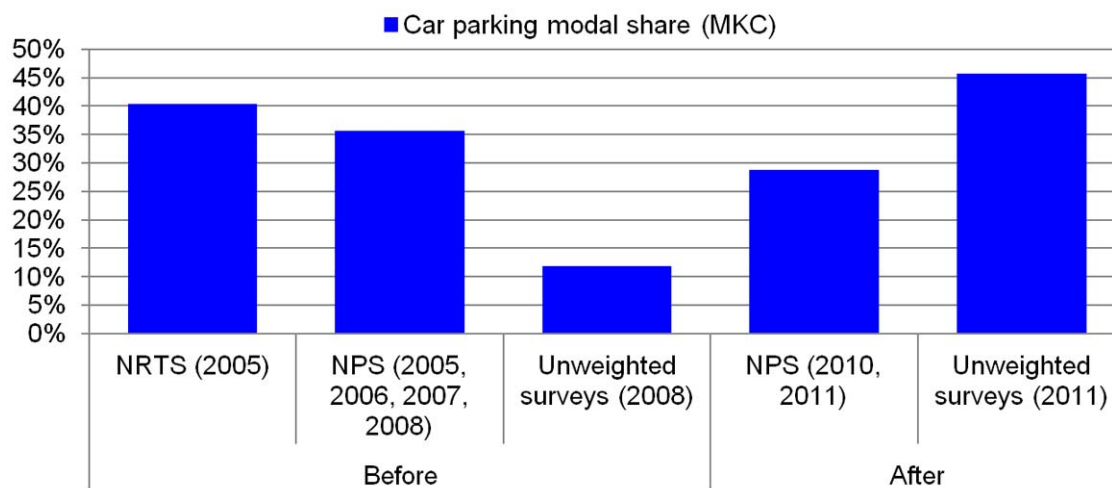


Figure 4 - Car parking modal share of respondents accessing the station (various data sources, Milton Keynes Central only)

In addition to the above surveys, quarterly manual car park counts were available for Milton Keynes Central. These suggested that there was a small average increase in cars parked (x1.04), from 1,948 cars parked in 2008 to 2,029 cars parked in 2011. See Table 23, in Section 7 for the counts.

Overall, then, there is huge variability between the surveys, even in terms of the direction of the trend. It seems likely that the proportion of people accessing the station by car was largely under-estimated in the 'Before' survey and slightly over-estimated in the 'After' survey, though it also illustrates the difficulties of deciding on what 'reality' was.

4.2.2 Proportion of respondents who were commuters

A similar analysis was conducted for the proportion of respondents who were commuters, using the LENNON ticket sales database as a comparison. Based on the LENNON data, the proportion of commuters is likely to be more than the proportion of season tickets, but less than the proportion of season tickets plus full price tickets. Milton Keynes Central is again used as an illustration in Figure 5. Similar data is provided for all other stations in Figure B4 in Appendix B2.

This analysis suggested that, compared to the LENNON data, the 'Before' survey under-estimated the proportion of commuters, whereas the 'After' survey over-estimated the proportion of

commuters. It is also of note that for this particular station, the LENNON data suggests that the NPS also under-estimates the proportion of commuters.

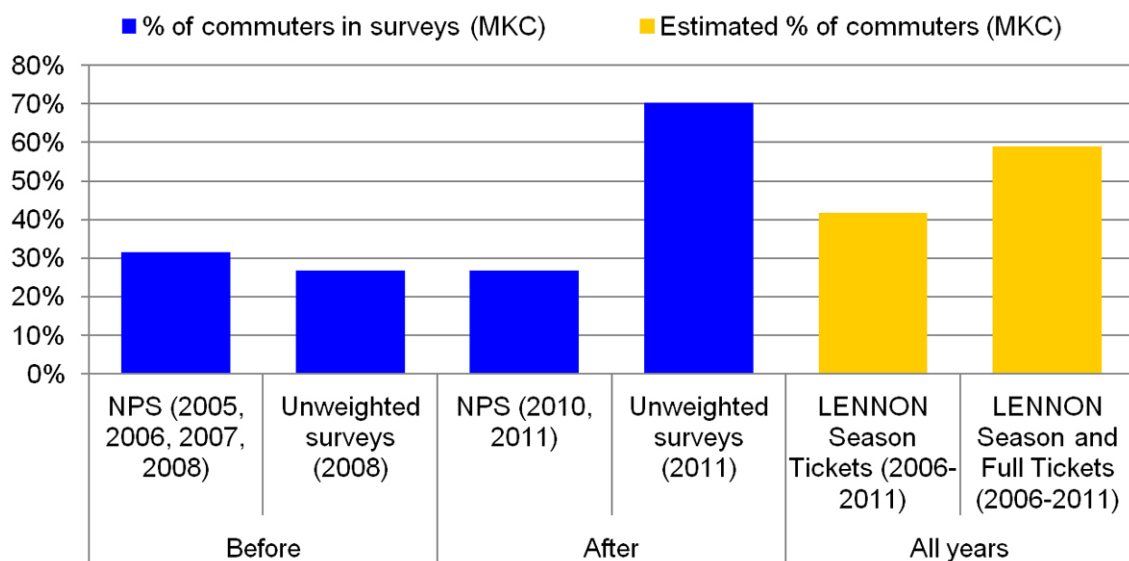


Figure 5 - Proportion of respondents who were commuters, compared with LENNON data at Milton Keynes (various data sources, Milton Keynes Central only)

4.2.3 Re-weighted surveys by journey purpose and age to NPS

Based on the above analysis, it was clear that it was necessary to re-weight the data to attempt to resolve the survey biases. It was decided to re-weight the survey data by a combination of both age and journey purpose. This was done by using the age and journey purpose profile from the NPS Autumn surveys for years 2006 to 2011, given that NPS had used a consistent methodology throughout. This approach helped to eliminate some of the survey bias; however, this approach was not possible for some stations, particularly those with small sample sizes. This was because the number of people in some categories was zero or close to zero and so it was not possible to scale-up to the NPS proportion (see Figure B7 in Appendix B2). Furthermore, there were also some concerns about the accuracy of the NPS itself (as illustrated by the analysis above). See Appendix B2.3 for further information.

After re-weighting, it was concluded that it was also necessary to put considerably more emphasis on investigating alternative sources of data wherever these were readily available, such as the NPS and NRTS. STP partners were consulted and

encouraged to supply as much additional evaluation evidence as they had available, in the form of both measurable counts and also anecdotal evidence.

The main findings are reported in Sections 6 and 7.

5 Impacts on patronage

One objective of the station travel plan process was to make it easier and more attractive to get to and from the stations involved, and thereby generate increased usage. Assessing changes in patronage is complex given the range of other factors that are also important, as discussed below.

To examine patronage, we have used data from LENNON. LENNON is the rail industry's central ticketing system, which holds information on the vast majority of national rail tickets purchased in Great Britain and is used to allocate the revenue from ticket sales between TOCs. It is also the primary source of data used by the rail industry to understand changes in patronage, and key trends are discussed in the annual publication, 'National Rail Trends'⁶.

5.1 National and regional trends

The latest edition of National Rail Trends has been used to show the national trend in rail patronage from Q3 (Oct-Dec) of the financial year 2007/8, to the period of latest available data Q4 (Jan-Mar) of financial year 2010/11, as given in Figure 6. This is a slightly shorter period than the data we have analysed for the stations in the STP programme (where we were able to obtain information up to Q2 of financial year 2011/12), and it should also be noted that the later national data are described as provisional. Nonetheless, the overall picture is relatively clear – namely, that the period of the STP programme was one when patronage was somewhat variable, probably due to economic changes, though showing growth towards the end of the period.

⁶ Office of Rail Regulation (2011) *National Rail Trends Yearbook – eighth edition*. ORR, London.

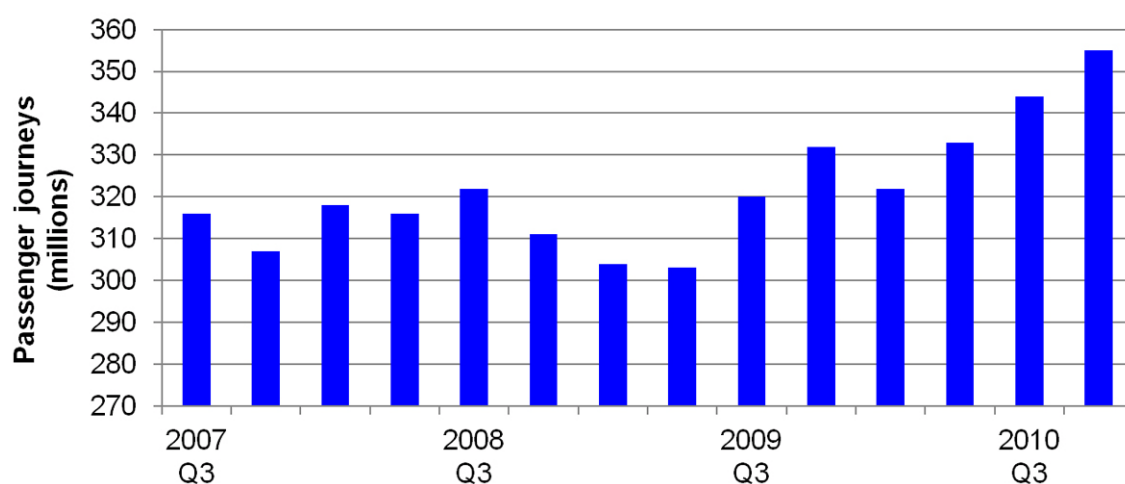


Figure 6 - National trends in rail patronage

In all cases, Q3 refers to the period October-December of the relevant calendar year

National Rail Trends also helps to illustrate the geographic variability in trends, as shown in Figure 7. This provides a snapshot of changes in patronage in individual regions between 2008/9 and 2009/10. Perhaps the main insight is that rail trends can be highly variable between locations, meaning that assessing performance in any one location can be particularly problematic.

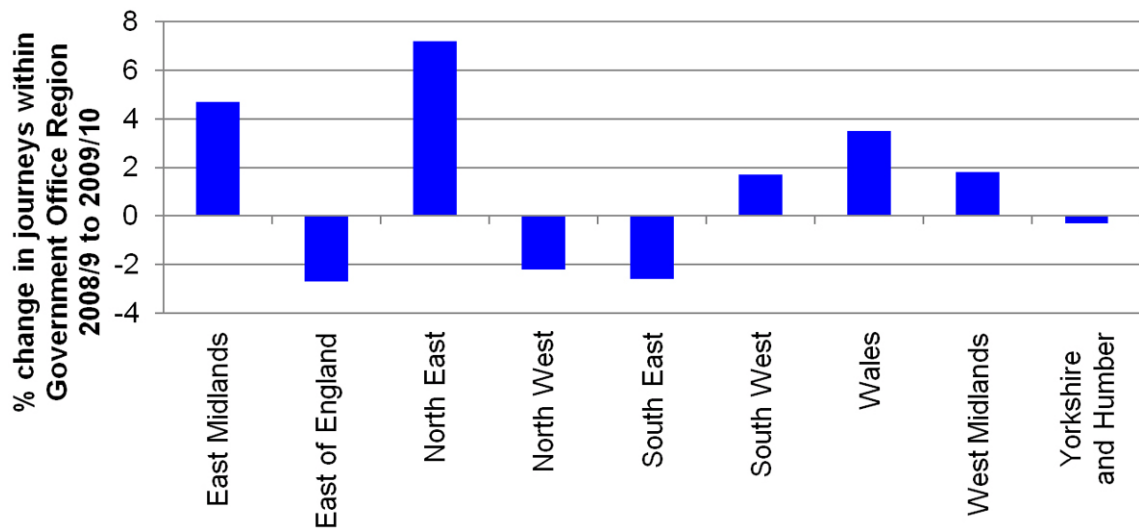


Figure 7 - Regional variation in changes in patronage

5.2 Changes in patronage for the STP stations from LENNON

To understand what had happened to rail patronage at the 29 STP stations, LENNON data was extracted and analysed for the following periods:

- Oct 2007 – Sep 2008
- Oct 2008 – Sep 2009
- Oct 2009 – Sep 2010
- Oct 2010 – Sep 2011

All ticket types were included in the analysis.

Results are displayed below⁷ for stations in three categories: less than 1,000,000; 1,000,000 to 10,000,000; greater than 10,000,000. It should be noted that Leeds had substantially higher patronage than the other stations, being the only “Category A” station in the pilot programme.

The results are then discussed at the end of this section.

⁷ See the Glossary at the start of the report for the list of abbreviated station names

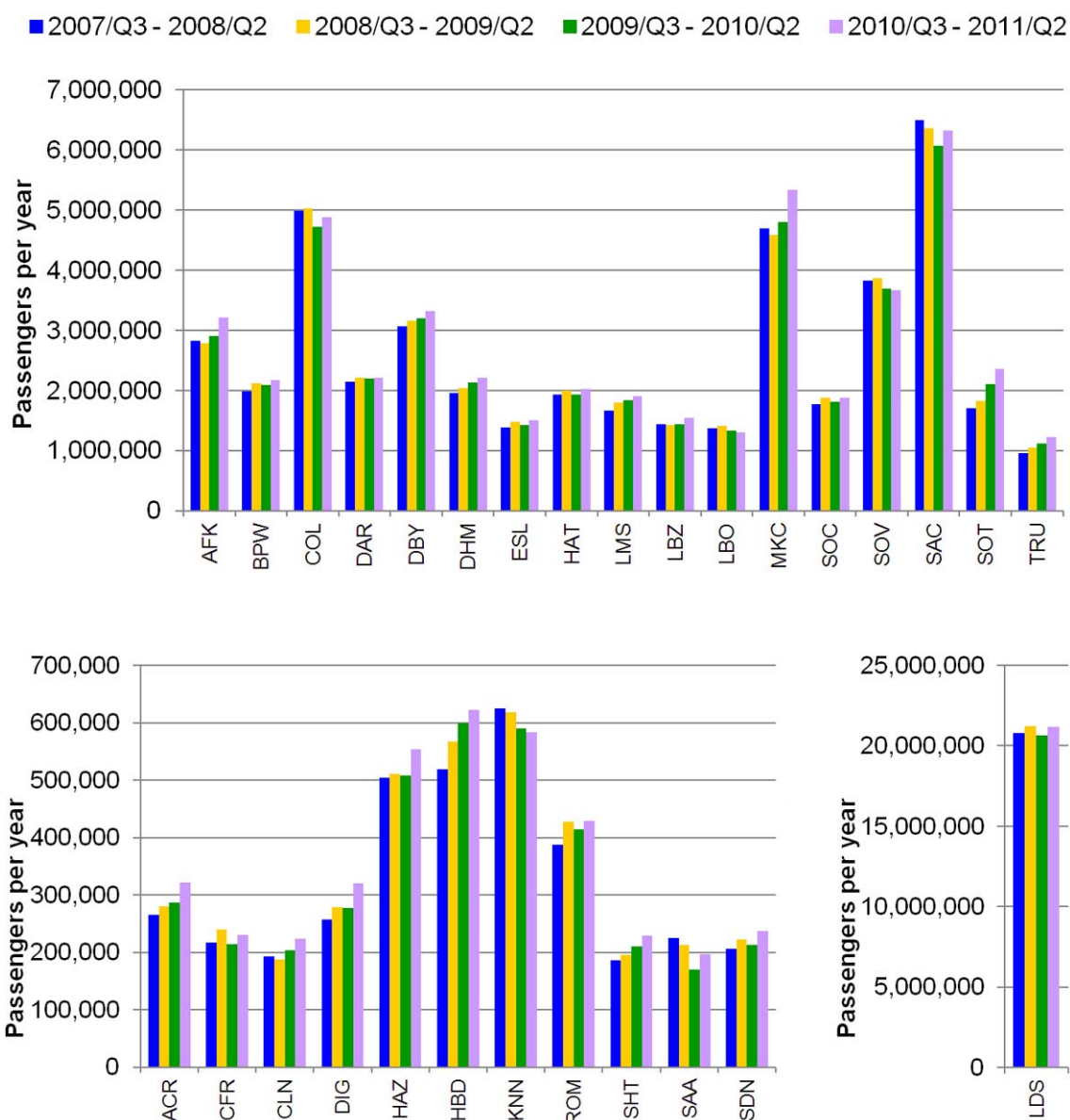


Figure 8 - Patronage per year for the previous four years, for stations
(Data source: LENNON)

5.3 Control Stations

In order to put the changes in patronage illustrated above into context, attempts were made to identify control stations for each of the STP stations, based on station size and region. shows how many control stations were used in each category considered.

Table 7 - Control stations for each required station category
(Data source: LENNON)

Station size (millions)	Region	Number of stations in control
>10	Yorkshire and Humber	0
1 to 10	East	35
1 to 10	East Midlands	3
1 to 10	North East	0
1 to 10	South East	29
1 to 10	South West	5
1 to 10	West Midlands	8
<1	East	84
<1	North West	137
<1	South East	125
<1	South West	72
<1	Wales	8
<1	West Midlands	84
<1	Yorkshire and Humber	87

There were no suitable control stations for Leeds (the busiest by far of all the stations and the only Category A station in the programme, >10 million) nor Darlington or Durham (North East, 1-10 million). For some other categories, there were only a small number of control stations and so these should be treated with caution.

It should also be noted that some control stations may not be suitable due to individual circumstances. For example, the control group for Leamington Spa (served mainly by Chiltern, Cross-Country and London Midland services) includes Coventry, Birmingham International and Wolverhampton. These stations are all on the West Coast Main Line, which has experienced substantial growth recently and so are not ideal controls. However, within the scope of this project, it was not possible to investigate individual circumstances and controls for each station.

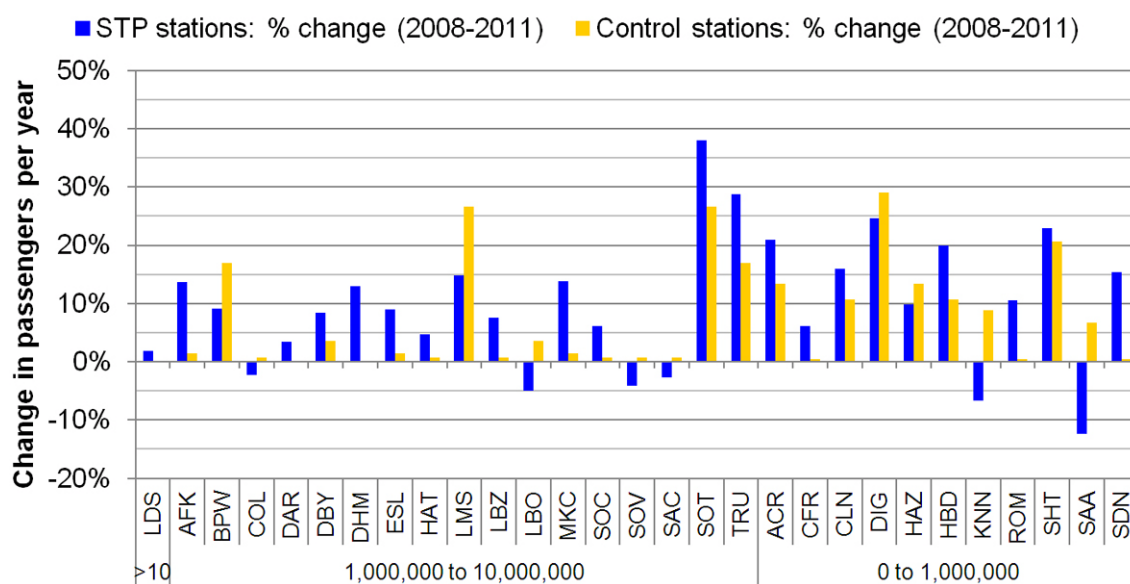


Figure 9 - Increase in patronage for the previous four years, for STP stations and control stations (Data source: LENNON)

5.4 Discussion of results

Overall, using October-September as the analysis period, between 2007/8 and 2010/11, patronage increased at 23 of the 29 stations. It increased by more than 5% at 20 stations, and by more than 10% at 13. At the six stations where patronage declined, it only declined by more than 5% at two stations, both of which are relatively small, and therefore more subject to random data fluctuation.

Of the 26 stations where there was at least some form of control data, 16 of the STP stations had outperformed their control.

Assessing the specific contribution of the STP work to patronage changes is extremely problematic.

Partly it is difficult to determine what gives fair control data, not least because other stations are subject to changes too.

Partly, this is because of confounding factors. For example, ten stations reported that there had been nearby development (of shops, offices, housing etc) which could have affected patronage and seven reported that there had been changes to rail services (both positive and negative). At Ashford International, Stoke on Trent, Truro and Accrington, it is entirely plausible that the station travel plan work may have contributed to the increases in patronage, but local development and/or changes to the rail services are also likely to have had a major effect.

Interestingly, the stations in the Cross River Partnership (particularly Eastleigh), and Hebden Bridge, appear to show strong growth, not least in comparison to reasonable sized controls (29 stations for Eastleigh; 87 stations for Hebden Bridge) and do not appear to have been subject to major external development or service changes. However, it is also notable that, in both cases, the station travel plan work seems to have complemented a range of activities taking place to make the stations more attractive. This, perhaps, indicates the value of whole station approaches to encouraging use.

6 Impacts on customer satisfaction

Another objective of the station travel plan process was to improve customer satisfaction with end to end journeys. There were two potential data sources for assessing satisfaction – the surveys conducted as part of the project, and data from the National Passenger Survey. Each data source is discussed below.

6.1 Results from baseline and follow-up surveys

In order to assess the effect of the STPs on customer satisfaction, the original intention was to use data from the Autumn 2008 (face-to-face) and Autumn 2011 (postal) surveys.

The following question was asked in both surveys:

How satisfied are you [on a scale of one to five] with the ease of travelling to and from this station? [one = Very Dissatisfied ... five = Very Satisfied]⁸

However, as discussed in Section 4, there were substantial problems due to the differences in the two survey methodologies. The surveys were re-weighted in an attempt to solve this issue. However, because of the scale of the differences, it was felt that ultimately this was not sufficient to draw robust conclusions about changes in satisfaction levels, as small changes in the composition of the sample could have altered the satisfaction rating in either direction.

Full results are presented for these surveys in Appendix A. Meanwhile, Table 8 provides a summary of the 2011 data. Ratings above 3.0 indicate that, overall, more passengers were satisfied than dissatisfied. The overwhelming impression from the data is that, at most stations, for most modes, on balance, more passengers are satisfied rather than dissatisfied.

⁸ The scale has been inverted in the analysis, so that 5= 'Very satisfied'; in the questionnaire, 1= 'Very satisfied'.

Table 8 - Satisfaction ratings from the 2011 data

Station	All modes	Car parking	Car drop off	Taxi drop off	Motorcycles	Buses	Cycling	Walking
Accrington								
Ashford International	3.8	3.6	3.6	4	5	4.1	4.1	4.1
Bristol Parkway	3.9	3.5	3.8	4.5		4.1	3.9	4.1
Chandlers Ford	4.3	3.8	3.8			3	5	4.5
Chapelton	4.2	4.6	3.2			3.9		4.3
Colchester	3.7	3.3	3.6	2.5	3.7	3.8	3.7	4
Darlington	4	3.7	4	4.3		4	4.2	4.2
Derby	3.8	3.8	3.4	4.1	5	3.4	3.9	4.4
Digby and Sowton	4.1	3.8	5					4.1
Durham	4	3.6	3.9	4.4		3.6	4.6	4.3
Eastleigh	4.1	4	3.5	3.5	4.5	3.6	3.7	4.3
Hatfield	3.4	3.4	2.8	3.2		3.7	3.8	3.5
Hazel Grove	4.1	4	3.9			5	4.7	4.3
Hebden Bridge	4.1	3.9	4.1			3.4	5	4.4
Kings Norton	4.4	4.2	4.8			4.2		4.5
Leamington Spa	4	3.9	3.8		5	3.6	4.4	4.3
Leeds	3.8	3.5	4.2	3.4		3.8	3.5	4
Leighton Buzzard	3.9	3.6	3.7	3.3	4	3.2	4	4.4
Loughborough	3.3	3.1	2.8	4.8		3.7	2.6	3.3
Milton Keynes Central	3.6	3.6	3.4	2.8		3.5	3.8	4.3
Romsey	4.1	4.1	3.9			3	4	4.1

Table 8 - Satisfaction ratings from the 2011 data

Station	All modes	Car parking	Car drop off	Taxi drop off	Motorcycles	Buses	Cycling	Walking
Shotton	3.2	3.6	3					3.2
Southend Central	4.4		4			3.7	5	4.5
Southend Victoria	3.8	4	2.5	3.5		4.4		3.9
St Albans Abbey	4.3	4.8	2.7			5	3	4.5
St Albans City	3.8	3.3	3.2	4.1		3.7	3.6	4.1
St Denys	3.9	1.7	4				4.5	3.9
Stoke-on-Trent	4	3.4	4.1	4.9	4	3.9	4.5	4
Truro	4.2	4	3.8	5		4.7	4	4.3

Data weighted to be comparable to NPS age and journey purpose data. Grey shading indicates a sample size of less than 20 respondents. Accrington was not part of the main 2011 survey programme, but conducted its own 'after' surveys.

6.2 The National Passenger Survey and national trends

The NPS has been conducted by Passenger Focus each Spring and Autumn since Autumn 1999. The NPS contains three questions that were deemed relevant to assessing the customer satisfaction in relation to station access:

- 'Rating of station where train was boarded:
 - Connections with other forms of public transport eg bus, tube, tram, taxi etc
 - Facilities for bicycle parking
 - Facilities for car parking'

For each of these questions, the respondents give a rating of: 'Very good'; 'Fairly good'; 'Neither good nor poor'; 'Fairly poor'; 'Very poor'.

Figure 10 provides national trend data for these questions for the period that it was readily available for – namely Spring 2009 through to Autumn 2011. This indicates that satisfaction with

cycle parking and car parking is generally improving, though this is not the case for public transport links from stations (albeit that satisfaction levels with public transport links start from a much higher base).

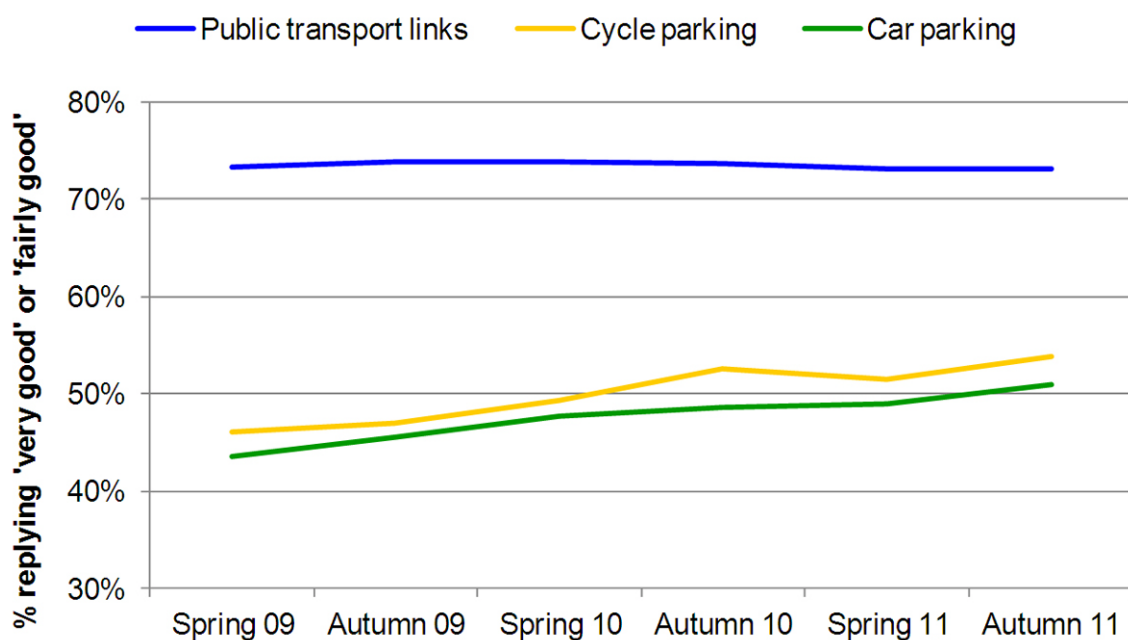


Figure 10 - National trends in satisfaction

6.3 Using National Passenger Survey data for analysing changes at the STP stations

After considerable deliberation, the NPS data was used to assess changes in customer satisfaction with changes in car parking, cycle parking and public transport links, as the main way of assessing changes in passenger satisfaction with ways of getting to and from the station. Although the NPS questions are not the same as the survey question, analysis of this data was considered a more appropriate approach, since comparable methods were used in all surveys.

6.3.1 Sample sizes

In order to achieve adequate sample sizes, a number of survey waves had to be pooled. Specifically, for the analysis in this section, the following surveys were used:

- 'Before' - Autumn 1999 to Spring 2008 (Waves 1 to 18)
- 'After' - Autumn 2008 to Spring 2011 (Waves 19 to 24)

The sample sizes for each of the questions are shown in Table 9

Table 9 - Sample size for the three access mode questions (Data source: NPS)

Sample size	Connections with public transport		Cycling facilities'		Car parking facilities	
	'99 - '08	'08 - '11	'99 - '08	'08 - '11	'99 - '08	'08 - '11
0 to 50	8	14	16	18	9	16
50 to 100	3	3	5	5	2	2
100 to 300	5	9	7	5	6	9
300 to 1000	8	2	1	1	7	2
1000+	5	1	0	0	5	0

This shows that there was quite a large range of sample sizes across the stations. Many of the stations had a sample size large enough to be suitable for analysis; although for some stations, the sample size was too small to produce statistically significant results. The exact sample sizes for each station are shown in Appendix A.

6.3.2 Statistical significance tests

In order to distinguish genuine trends from noise in the data, significance tests were conducted at the 90% level of significance. If something is said to be statistically significant at the 90% level, this means that there is a less than 10% probability that the change has occurred by chance.

Two measures of satisfaction were analysed and compared for the 'Before' and 'After' data:

- The percentage of respondents who answered either 'Very good' or 'Fairly good'
- The average score for each station, where: five ='Very good'; four ='Fairly good'; three ='Neither good nor poor'; two ='Fairly poor'; one ='Very poor'

The 'Two-proportion Z-Test' is used to compare whether two proportions from two random samples are significantly different and so was applied for the first measure. The 't-Test' is used to compare whether two averages from two random samples are significantly different and so was applied for the second measure.

The results showing significant increases and decreases are highlighted in the tables in Appendix B3, and summarised below.

These tables also provide the indicators of changes in provision for the relevant modes that have been developed in this study in order to compare stations on what they implemented through their station travel plans. These have already been discussed in Section 3, and are reported for individual stations in Appendix A.

It should be noted that, where changes do not achieve statistical significance, in some cases, this will be due to the small size of the sample rather than because there has not been a 'true' change – but there is no way of assessing this.

The results from the analysis are presented below, followed by a discussion of results at the end.

6.3.3 Connections with other forms of public transport

Table 10 shows the number of stations that had statistically significant changes with regards to the 'rating of connections with other forms of public transport' question.

Table 10 - Satisfaction rating for 'connections with other forms of public transport' (Data source: NPS)

Change	% 'Very good' or 'Fairly good'	Average score
Significant increase	11	13
No significant change	15	13
Significant decrease	0	0

The stations that had statistically significant changes in either of the measures are shown in Table 11.

Table 11 – Stations with significant changes in satisfaction rating for 'connections with other forms of public transport', compared against bus initiatives implemented (Data source: NPS)

Table 11 - Stations with significant changes in satisfaction rating for 'connections with other forms of public transport', compared against bus initiatives implemented (Data source: NPS)

Station	% Very good or Fairly good			Average score			Bus - frequency	Bus - other
	99-08	08-11	Change	99-08	08-11	Change		
BPW	61%	70%	x 1.14	3.49	3.80	x 1.09	▲	▲▲▲
COL	68%	70%	x 1.03	3.62	3.83	x 1.06	▲▲▲	▲▲▲
DAR	61%	70%	x 1.14	3.60	3.76	x 1.04	◀▶	▲
DBY	56%	66%	x 1.18	3.41	3.67	x 1.08	▲	▲▲
DIG	35%	50%	x 1.41	2.93	3.35	x 1.14	◀▶	▲
ESL	56%	76%	x 1.37	3.45	3.76	x 1.09	◀▶	▲
HAT	56%	77%	x 1.38	3.38	3.80	x 1.13	◀▶	▲▲
LMS	50%	61%	x 1.22	3.33	3.57	x 1.07	▼▼	▲
LDS	58%	75%	x 1.31	3.49	3.96	x 1.14	no info	▲
LBZ	40%	52%	x 1.3	3.18	3.44	x 1.08	▲▲▲	▲▲▲
LBO	65%	73%	x 1.12	3.63	3.85	x 1.06	no info	◀▶
MKC	69%	70%	x 1.02	3.73	3.84	x 1.03	◀▶	▲▲
SAA	40%	75%	x 1.87	3.12	3.85	x 1.23	▲	p▲
SAC	72%	78%	x 1.08	3.76	3.93	x 1.04	◀▶	p▲
SOT	72%	76%	x 1.06	3.81	4.08	x 1.07	◀▶	▲

Green shading indicates a statistically significant increase at the 90% confidence level.

6.3.4 Facilities for bicycle parking

Table 12 shows the number of stations that had statistically significant changes with regards to the 'rating of facilities for bicycle parking' question.

Table 12 - Satisfaction rating for 'facilities for bicycle parking' (Data source: NPS)

Change	% 'Very good' or 'Fairly good'	Average score
Significant increase	6	7
No significant change	18	17
Significant decrease	1	1

The stations that had statistically significant changes in either of the measures are shown in Table 13.

Table 13 - Stations with significant changes in satisfaction rating for 'facilities for bicycle parking', compared against cycling initiatives implemented (Data source: NPS)

Station	% Very good or Fairly good			Average score			Cycle parking spaces	Cycle parking security	Cycle parking 'quality'	Cycling in local area
	99-08	08-11	Change	99-08	08-11	Change				
BPW	61%	81%	x 1.33	3.66	4.11	x 1.12	▲▲	▲▲	▲▲	▲▲
CLN	0%	46%	0 to some ^a	1.17	3.46	x 2.96	▲	▲▲	▲	◀▶
DAR	59%	34%	÷ 1.75	3.60	3.21	÷ 1.12	▲▲▲	▲	◀▶	▲▲
DHM	53%	68%	x 1.29	3.30	3.76	x 1.14	▲▲	▲▲	▲▲	▲
KNN	62%	84%	x 1.36	3.38	4.21	x 1.25	▲▲▲	▲	▲▲	▲
LDS	39%	54%	x 1.39	3.13	3.51	x 1.12	▲▲▲	▲▲	▲	▲▲▲
LBZ	62%	85%	x 1.38	3.50	4.11	x 1.17	▲▲	▲	▲▲▲	▲▲▲
ROM	20%	69%	x 3.48	3.30	3.85	x 1.17	◀▶	◀▶	▲▲	▲▲
SAC	62%	72%	x 1.16	3.51	3.78	x 1.08	▲▲	▲▲▲	▲▲▲	▲

a. The terminology '0 to some' is used to describe an increase from zero.

Green shading indicates a statistically significant increase at the 90% confidence level. Red shading indicates a statistically significant decrease at the 90% confidence level.

6.3.5 Facilities for car parking

Table 14 shows the number of stations that had statistically significant changes with regards to the 'rating of facilities for car parking' question.

Table 14 - Satisfaction rating for 'facilities for car parking' (Data source: NPS)

Change	% 'Very good' or 'Fairly good'	Average score
Significant increase	6	10
No significant change	17	16
Significant decrease	3	0

Table 15 - Stations with significant changes in satisfaction rating for 'facilities for car parking', compared against changes in car parking (Data source: NPS)

Station	% Very good or Fairly good			Average score			Cycle parking spaces	Cycle parking security
	99-08	08-11	Change	99-08	08-11	Change		
AFK	63%	72%	x 1.14	3.55	3.79	x 1.07	▲▲	▲▲
BPW	76%	86%	x 1.13	3.93	4.07	x 1.03	▲	◀▶
CLN	3%	23%	x 7.35	1.19	2.84	x 2.4	◀▶	◀▶
COL	61%	63%	x 1.03	3.49	3.67	x 1.05	◀▶	▲▲
DAR	45%	37%	÷ 1.22	3.10	2.93	÷ 1.06	◀▶	◀▶
KNN	75%	94%	x 1.24	3.95	4.49	x 1.14	◀▶	◀▶
LMS	36%	46%	x 1.3	2.84	3.14	x 1.1	▲▲▲	▲
LDS	40%	44%	x 1.12	3.04	3.17	x 1.04	◀▶	▲
LBO	55%	69%	x 1.26	3.29	3.69	x 1.12	▲▲	◀▶
MKC	55%	49%	÷ 1.13	3.37	3.25	÷ 1.04	◀▶	▲
ROM	35%	56%	x 1.61	2.79	3.36	x 1.2	▲▲	▲
SOC	38%	21%	÷ 1.76	2.78	2.71	÷ 1.02	◀▶	◀▶
SOT	47%	55%	x 1.18	3.11	3.34	x 1.07	▲▲▲	▲

Green shading indicates a statistically significant increase at the 90% confidence level. Red shading indicates a statistically significant decrease at the 90% confidence level.

6.4 Discussion of results

Overall, the tables given above indicate that many of the STPs have been successful at increasing satisfaction with some of the access choices available to passengers. Specifically, according to at least one of the two measures used:

- Fifteen stations experienced statistically significant increases in passenger satisfaction with connections to other forms of public transport
- Eight stations experienced statistically significant increases in passenger satisfaction with cycle parking
- Ten stations experienced statistically significant increases in passenger satisfaction with car parking

Given that the national trend has been for satisfaction with **public transport links** to plateau, achieving improvements in this area are notable. As discussed in Section 5, and indicated in the table, not all of these stations have necessarily worked intensively on improving actual bus service provision, so increases in satisfaction may also reflect the gains made from marketing and providing passengers with better information.

With **cycle parking**, it is notable that the stations achieving increases in satisfaction also tend to be those which report having made improvements. It is also notable that six of these stations are reporting that more than 60% of passengers think that cycle parking facilities are fairly or very good, which is considerably greater than the national average. The reduction in satisfaction at Darlington is surprising, since, during the project, there has been a major increase in both the quantity and quality of provision. One possible explanation is that other activities to encourage cycling have proved so effective that current provision is still subject to capacity constraints. However, further investigation would be needed to fully understand the issues involved.

With **car parking**, it is notable that six of the stations where statistically significant increases in satisfaction have occurred have also increased car parking charges. And again, at five stations, more than 60% of passengers think that car parking facilities are fairly or very good, which is considerably greater than the national average. Of the three stations where satisfaction has decreased, two stations appear to have made no changes, so changes in satisfaction must relate to wider expectations.

A number of stations have increased satisfaction for all three indicators. For example:

- At **Leeds**, the proportion of people who think that facilities are 'very' or 'fairly' good has gone from 58% to 75% for public transport links, 62% to 85% for cycle parking, and 40% to 44% for car parking.
- At **Bristol Parkway**, the proportion of people who think that facilities are 'very' or 'fairly' good has gone from 61% to 70% for public transport links, 61% to 81% for cycle parking, and 76% to 86% for car parking.

7 Impacts on use of different modes

This section summarises the analysis of the available data on the use of different modes for travel to the stations. As has been discussed previously, because of the significant differences in the composition of the before and after passenger survey samples, it was concluded that analysis of the survey data alone could not provide robust measurements of changes in mode. The scope of the study was therefore increased to include analysis of additional sources of data, such as local counts of users at individual stations. In this section, evidence on the use of each mode from a number of different sources is compared, in order to identify stations where there is strong evidence of significant changes in use. Where similar trends are present in multiple datasets, conclusions can be drawn more robustly than when considering individual data sources in isolation.

Results are also presented relating to:

- Survey respondents reporting that they had changed mode
- Survey respondents reporting that they were new users of the station
- These results provide an indication of whether there has been a change in demand for a particular mode following interventions that have been carried out, and whether the stations have been successful in attracting new passengers.
- An initial objective of the study was to use data about modal shift, and passenger generation, to provide a robust estimate of changes in total vehicle km and CO₂. For a wide variety of reasons, discussed throughout the report, the complexities of understanding what has happened make estimates of these measures impossible.

7.1 Changes in mode, according to multiple data sources

7.1.1 Sources of data

The five data sources considered in this section are as follows:

- **'Additional measurable evidence'** – Evidence collected by STP partners in the form of counts. The methodologies vary for each measure, but they are common in that each of these enables the calculation of an estimate of percentage change for the particular mode.
- **'Additional anecdotal evidence'** – Evidence collected by STP partners in the form of anecdotal evidence, for example informal observations made by station staff.
- **'NPS' – The National Passenger Survey (NPS)**. The NPS has been conducted each Spring and Autumn since 1999 and the Spring survey includes a question on the access mode used to get to the station. It should be noted that the question allows multiple choices. The sample size tends to be sufficient at larger stations. Survey years 2005, 2006, 2007, 2008 were used for 'Before' and 2010 and 2011 were used for 'After'.
- **'Unweighted surveys, commuter only'** – Data from the 2008 and 2011 modal share surveys that were collected specifically for this study. The 'commuters' subset of the sample was analysed by itself, in order to mitigate for the differences between the different sample composition of the two surveys, and also because the behaviour of commuters is of particular interest.
- **'Weighted surveys'** – Data from the 2008 and 2011 modal share surveys that were collected specifically for this study. Because there were significantly different sample biases in journey purpose and age, the samples were reweighted to enable comparison on a similar basis (as previously discussed in Section 4). However, in some cases the sample sizes were insufficient to do this.

Other sources of data are also presented in Appendix A and include: the National Rail Travel Survey (2005 only); and the unweighted survey data.

7.1.2 Sample sizes, statistical significance and data analysis

For the modal share data from the three surveys ('NPS', 'Unweighted surveys, commuter only', 'Weighted surveys'), standard statistical tests were not applied, owing to the issues already discussed in Section 4.

For these three surveys, only those with a sample size greater than 50 in both the 'Before' and 'After' surveys were analysed. Those with smaller sample sizes are therefore excluded from the analysis for the respective datasets in the rest of this section, and have been left blank in the relevant tables later in this section. In other words – a blank space does not mean that there was no change; rather that it was not appropriate to draw any conclusions given insufficient sample size⁹.

In the following parts of this section, each mode is considered in turn. Our rating of the measures implemented is given, together with a comparison of the different sources of evidence on outcomes. The symbols that are used are explained in Table 16.

Table 16 - Key for comparison tables in Section 7

	Symbol	Meaning
'Initiatives implemented'	▲▲▲	= 'Large Increase' (as defined in Appendix B1)
	▲▲	= 'Moderate Increase' (as defined in Appendix B1)
	▲	= 'Minor Increase' (as defined in Appendix B1)
	◀▶	= 'No change' (as defined in Appendix B1)
	▼	= 'Minor Decrease' (as defined in Appendix B1)
	▼▼	= 'Moderate Decrease' (as defined in Appendix B1)
	▼▼▼	= 'Large Decrease' (as defined in Appendix B1)
'Outcome' indicators	△	Increase (x1.1 or more)
	◁▷	No change (÷1.1 to x1.1)
	▽	Decrease (÷1.1 or more)
	□	Inconclusive (Sample <50 in at least one survey)

⁹ As previously mentioned, Accrington conducted independent final monitoring, and was not part of the 2011 main survey programme.

The 'Total evidence ranking' column given in each table provides a qualitative judgement of the strength of evidence for a change, based on the available data for each station. This column is left blank to indicate 'insufficient data to make a sound judgement'. This has been done when there is: no suitable data from any of the sources; contradictory trends across two datasets; no additional data from the NPS or other sources (ie only 'Unweighted surveys commuter only' and/or 'Weighted surveys'). Where the additional evidence is very strong (eg ticket barrier data for car parks, see Section 4.2.3), this takes precedence, regardless of the results of the surveys.

7.1.3 Cycling

Several stations collected evidence relating to cycling in addition to modal share surveys, as shown in Table 17.

The majority of this evidence was counts of the number of cycles parked. This measure is a useful indicator that is relatively quick to collect, but has some limitations, as discussed in Section 10.

Cycle flows were measured at two stations, with manual counts at Bristol Parkway and automatic cycle counters at Ashford International. The automatic counters were at two locations near the station as part of a wider monitoring scheme and so did not exclusively capture rail passengers.

Table 17 - Measurable additional evidence relating to cycling
(Data source: stakeholder consultation)

Station	Additional measurable evidence	2008	2009	2010	2011	Change
AFK	Average Daily Cycle Flow	373	348	332	360	÷ 1.04
BPW	Daily Cycle Flow (2009='Base 100')		100		111.0	x 1.11
COL	Number of cycles parked (2008='Base 100')	100			128.0	x 1.28
KNN	Average number of cycles parked			0.9	2.1	x 2.38
LDS	Average number of cycles parked			83.3	144.8	x 1.74
LBZ	Average number of cycles parked	55.2	60.5	65.1	72.2	x 1.31
MKC	Average number of cycles parked	214	230	198	261	x 1.22
SOT	Number of cycles parked	9			22	x 2.44

The majority of these sources show a substantial increase in cycling activity. The results for Leighton Buzzard (31% increase) are based on the largest sample size with a consistent methodology. The counts for Kings Norton were conducted monthly, although these show only a very small number of cycles parked. The counts for Milton Keynes Central were conducted quarterly and show an increase of 22% from 214 to 261 cycles parked. The counts for Leeds were before and after the introduction of the Cycle Point; it should be noted that all days in 2010 were affected by rain. Counts presented for Colchester, Bristol Parkway and Stoke-on-Trent were one-off counts.

As well as measurable additional evidence, anecdotal evidence was also received through consultation with the STP partners. Some examples:

'At Ashford International, there was no formal monitoring of cycle parking utilisation. However, cycle parking provision almost doubled (from 120 to 232 spaces). This is regularly full (with the exception of the secure storage facility) and overflow parking occurs along railings etc. This suggests that cycle parking has approximately doubled during the lifetime of the STP.'

'At Leighton Buzzard, as of January 2010, the 'Go Cycle' commuter cycling promotion had encouraged 21 commuters to take up a loan bike and cycle to the station more often. Participants were required to live in the area, commute by train to work or college most days and to commit to cycle to the station on thirty days or more per year.'

The full table of anecdotal additional evidence is in Appendix B4.

summarises the cycling initiatives implemented and also provides the comparison of the different sources of evidence on outcomes.

Table 18 - Table 18 Comparison of cycling evidence sources

Station	'Initiatives' implemented				'Outcome' indicators by evidence source					
	Cycle parking spaces	Cycle parking security	Cycle parking 'quality'	Cycling in local area	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
ACR	▲▲▲	▲	▲▲	▲▲						
AFK	▲▲	▲▲	▲▲	▲▲▲	◁▷	△		△	△	Increase
BPW	▲▲	▲▲	▲▲	▲▲	△		◁▷		△	Increase
CFR	▲	◁▷	▲▲	▲						
CLN	▲	▲▲	▲	◁▷		◁▷			◁▷	No change
COL	▲▲▲	▲▲▲	▲▲▲	▲▲	△	△	▽	△	△	Increase
DAR	▲▲▲	▲	◁▷	▲▲			△		△	Increase
DBY	◁▷	◁▷	◁▷	▲▲			▽		△	
DIG	▲▲▲	▲▲	◁▷	▲						
DHM	▲▲	▲▲	▲▲	▲		△	▽		△	Increase
ESL	▲	▲▲▲	▲▲	◁▷					△	
HAT	▲▲	▲	▲▲	▲				◁▷	▽	
HAZ	▲▲	▲▲▲	▲▲	▲▲				△	△	
HBD	▲▲▲	▲	▲	▲		◁▷			△	
KNN	▲▲▲	▲	▲▲	▲	△			◁▷	◁▷	No change
LMS	▲▲▲	▲	◁▷	▲		△	△		△	Increase
LDS	▲▲▲	▲▲	▲	▲▲▲	△		△	△	△	Increase
LBZ	▲▲	▲	▲▲▲	▲▲▲	△	△			◁▷	Increase
LBO	▲▲▲	▲▲	▲▲▲	▲▲▲		◁▷	△	△	△	Increase

Table 18 - Table 18 Comparison of cycling evidence sources

Station	'Initiatives' implemented				'Outcome' indicators by evidence source					
	Cycle parking spaces	Cycle parking security	Cycle parking 'quality'	Cycling in local area	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
MKC	◄►	▲	▲	▲	△		△	△	△	Increase
ROM	◄►	◄►	▲▲	▲▲					▽	
SHT	▲▲▲	▲▲▲	▲▲▲	▲▲						
SOC	◄►	◄►	◄►	◄►				△	◄►	
SOV	▲▲▲	▲	◄►	▲▲		△	△		▽	Increase
SAA	◄►	▲	▲▲	◄►						
SAC	▲▲	▲▲▲	▲▲▲	▲			△	△	△	Increase
SDN	▲▲▲	◄►	▲	▲▲		△			▽	
SOT	▲▲▲	▲▲▲	▲▲▲	▲	△				▽	
TRU	◄►	▲	◄►	◄►					△	
△ Total	23	24	22	24	7	7	7	8	15	12
◄► Total	6	5	7	5	1	3	1	2	4	2
▽ Total	0	0	0	0	0	0	3	0	5	0
Total [blank]	0	0	0	0	21	19	18	19	5	15

For 12 stations, the evidence that there has been an increase in cycling seems fairly clear. All of these stations successfully implemented a range of cycling initiatives. The stations where this evidence of increases is most clear are discussed in more detail below.

At Colchester, the number of parked bicycles counted increased by 28%, and a 'noted increase in take-up of secure cycle parking'

was reported in early 2011. These observations are backed-up by both the weighted surveys and commuter-only surveys, where the cycle modal share increased from 3% to 8% and 6% to 11%, respectively. In contrast, the NPS data showed a reduction from 6% in the 'Before' survey and 5% in the 'After' survey.

St Albans City had robust sample sizes in most surveys and had some of the largest cycling increases that were recorded in the surveys. There was an increase in cycle modal share in the weighted surveys (4% to 10%); the commuter-only surveys (4% to 13%) and to a lesser extent in the NPS (6% to 8%). The cycling modal share in the NRTS in 2005 was 3% (sample size ~3,500), which suggests that the cycling modal share in the 2008 'Before' surveys was believable.

At Leeds, the access mode survey results are reasonably robust due to the large sample sizes involved. There were small increases in the cycling modal share in the commuter-only surveys (0.8% to 4.4%), weighted surveys (1.1% to 1.6%) and NPS surveys (0.9% to 1.9%). Although these are relatively small percentages, they become large numbers of cyclists when multiplied by the patronage (approximately 21 million per year). The additional average cycle parking counts showed a large increase in number of cycles parked at the station from 83 to 145.

Further examples similar to the above can be investigated using the individual station reports in Appendix A.

Although the majority of stations (where there was robust evidence) showed that cycling initiatives had encouraged more cycling, for two stations there was evidence to the contrary. This suggests that at some locations, no matter how good the cycling improvements on the station, it will be very difficult to achieve significant increases in cycling because of other local factors in the area, and that the overall 'cycle-friendliness' of the catchment area should be considered when planning investments in cycling. It could also be because other modes were made even more attractive.

From the analysis, it can be concluded that investment in cycling initiatives at stations can have a positive impact on the number of people accessing the station by cycling. This is supported by evidence from other initiatives, such as the recent Bike'n'Ride scheme to improve cycle parking at targeted stations, at which significant uptake in the use of cycle parking generally followed

improvements. However, it is not possible to distinguish whether specific cycling initiatives work better than others. Rather, this is very station-specific. For example, if existing cycle provision is over-utilised, then increasing the number of spaces is probably the first initiative to implement. Alternatively, if existing cycle provision is under-utilised, but crime in the area is an issue, then improving security may be the most important issue to resolve.

7.1.4 Buses

Two stations collected additional measurable evidence relating to buses, as shown in .

Ashford International provided data from the bus operator on the total number of bus trips on routes serving the station in June (though it is unclear whether the methodology used was consistent). Leighton Buzzard conducted counts of the number of people alighting buses at the station.

Table 19 - Measurable additional evidence relating to buses (Data source: stakeholder consultation)

Station	Additional measurable evidence	2008	2009	2010	2011	Change
AFK	Total monthly bus patronage (2008='Base 100')	100	137	169	173	x 1.73
LBZ	Number of persons alighting buses in the AM Peak	45			80.2	x 1.78

The five sources of data are summarised and cross-referenced with the bus initiatives in Table 20.

Table 20 - Comparison of bus evidence sources

Station	'Initiatives'		'Outcome' indicators by evidence source					
	Bus -frequency	Bus - other	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
ACR	◄	▲						
AFK	▲	▲▲	△	△		△	△	Increase
BPW	▲	▲▲▲			▽		▽	Decrease
CFR	◄	▲						
CLN	▲	▲		△			▽	Increase
COL	▲▲▲	▲▲▲			◄	▽	▽	
DAR	◄	▲			▽		◄	
DBY	▲	▲▲			▽		△	
DIG	◄	▲						
DHM	▲▲	▲▲▲			△		◄	
ESL	◄	▲					◄	
HAT	◄	▲▲				▽	▽	
HAZ	no info	▲▲				▽	▽	
HBD	▲	◄					△	
KNN	◄	▲				△	△	
LMS	▼▼	▲			△		▽	
LDS	no info	▲			◄	△	◄	No change
LBZ	▲▲▲	▲▲▲	△	△			△	Increase
LBO	no info	◄			△	▽	▽	
MKC	◄	▲▲			◄	▽	△	

Table 20 - Comparison of bus evidence sources

Station	'Initiatives'		'Outcome' indicators by evidence source					
	Bus -frequency	Bus - other	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
ROM	no info	◄					▽	
SHT	▲	▲▲						
SOC	◄	◄				◄	△	
SOV	◄	▲▲			▽		△	
SAA	▲	▲▲						
SAC	◄	▲▲			△	▽	▽	
SDN	◄	◄					▽	
SOT	◄	▲					◄	
TRU	◄	▲					△	
△ Total	10	24	2	3	4	3	9	3
◄ Total	14	5	0	0	3	1	5	1
▽ Total	1	0	0	0	4	6	10	1
Total [blank]	4	0	27	26	18	19	5	24

There was not as much additional evidence for buses as there was for cycling, and so fewer conclusions can be drawn from the available data. However, overall, where the available evidence is robust, there has been an increase in bus usage at three stations, no change at one, and a potential decrease at one¹⁰.

10 Although both of the available survey results suggest a decrease in bus patronage at Bristol Parkway, this seems unlikely given the substantial measures implemented to improve facilities for bus passengers during the station travel plan process.

At **Leighton Buzzard**, the manual counts suggested a 78% increase in rail passengers accessing the station by bus, up to an average of 80 passengers in the AM Peak. However, this should be treated with caution, because the 2008 observation was only based on one count. Nevertheless, this trend is backed-up by the weighted survey data, which showed an increase in modal share from 1% to 6%. When this is multiplied by the increase in overall rail patronage from LENNON, it represents a 640% increase.

The bus data at **Ashford International** suggested an increase of 73% in the number of bus passengers on routes serving the rail station. This is backed up by the results of the surveys, with modal share increasing in both the weighted survey (by a factor of 1.6) and also the commuter-only survey (by a factor of 1.35).

At **Chapeltown**, evidence from a quarterly report in October 2010 said that the new 35A bus service was introduced in 2009 and before the introduction of this service, patronage was 'approximately 400 passengers per week' and as of October 2010, patronage had increased to 'between 700 and 900'. Conversely, the weighted surveys suggested a decrease; however, in this case the additional evidence takes precedence.

At **Leeds**, it was noted in the stakeholder consultation that city-wide bus usage data was available, but that this could not be used to determine rail station users, because buses serving all city centre stops would carry rail passengers, not just buses serving the rail station interchange. The weighted survey and NPS suggested 'no change' (x1.00 and ÷1.09, respectively), but the commuter-only survey suggested a large increase (x2.52). With two out of three surveys agreeing, this was classified overall as 'no change'.

PlusBus ticket data was also available for analysis and the results are presented in Section 7.2

7.1.5 Walking

Bristol Parkway was the only station to provide evidence of pedestrians counts, as shown in . These manual counts were conducted quarterly for a 12-hour period, at the same time as the cycle counts.

Table 21 - Measurable additional evidence relating to walking
(Data source: stakeholder consultation)

Station	Additional measurable evidence	2008	2009	2010	2011	Change
BPW	Daily pedestrian flow (2009='Base 100')		100		120.0	x 1.20

The five sources of data are summarised and cross-referenced with the walking initiatives in Table 22.

Table 22 Comparison of walking evidence sources

Table 22 -

Station	'Initiatives'	'Outcome' indicators by evidence source					
	Walking - 'changes made'	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
ACR	▲▲						
AFK	▲▲▲				△	△	
BPW	▲	△		▽		△	Increase
CFR	▲▲						
CLN	▲					△	
COL	▲			▽	▽	◁▷	Decrease
DAR	▲			△		▽	
DBY	◁▷			◁▷		▽	
DIG	▲						
DHM	▲▲			△		△	Increase
ESL	◁▷					◁▷	
HAT	▲				△	△	
HAZ	▲▲				▽	△	
HBD	▲					◁▷	
KNN	▲▲				▽	◁▷	
LMS	▲			▽		▽	Decrease
LDS	▲▲			◁▷	▽	▽	
LBZ	▲▲					◁▷	
LBO	▲▲			◁▷	△	△	

Table 22 -

Station	'Initiatives'	'Outcome' indicators by evidence source					
	Walking - 'changes made'	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
MKC	▲			△	▽	▽	
ROM	▲▲▲					△	
SHT	▲▲						
SOC	▲				△	◁▷	
SOV	▲▲▲			◁▷		▽	
SAA	▲						
SAC	▲▲			▽	△	△	
SDN	◁▷					△	
SOT	▲▲▲					◁▷	
TRU	▲					▽	
▲ Total	26	1	0	3	5	10	2
◁▷ Total	3	0	0	4	0	7	0
▽ Total	0	0	0	4	5	7	2
Total [blank]	0	28	29	18	19	5	25

As discussed in Section 3, many of the stations implemented various walking initiatives. In the stakeholder consultation, 14 stations were classified as achieving a 'moderate' or 'large increase' in the positive conditions for pedestrians, which meant that they had implemented four or more walking initiatives (out of a list of nine). However, due to the lack of additional evaluation evidence, it is not possible to draw as many conclusions on the

effectiveness of these initiatives, as it was for cycling and buses. However, it is possible to draw some conclusions for the following stations.

At **Bristol Parkway**, the manual pedestrian counts suggested an increase of 20% in walking. This is backed up by an increase in the weighted surveys (x1.77), but contradicted by a decrease in the NPS ($\div 1.12$).

At **Durham**, a large increase in walking was observed in the weighted surveys (x4.89) and also in the NPS (x1.5).

At many stations, in particular the smaller ones, walking takes up the greatest modal share (see Figure 11). At three stations, no walking initiatives were implemented, and yet, at two of these, the walking modal share in the 2011 weighted survey was over 60%. This suggests that it may be appropriate to give considerably more attention to walking than some of the station travel plans chose to do.

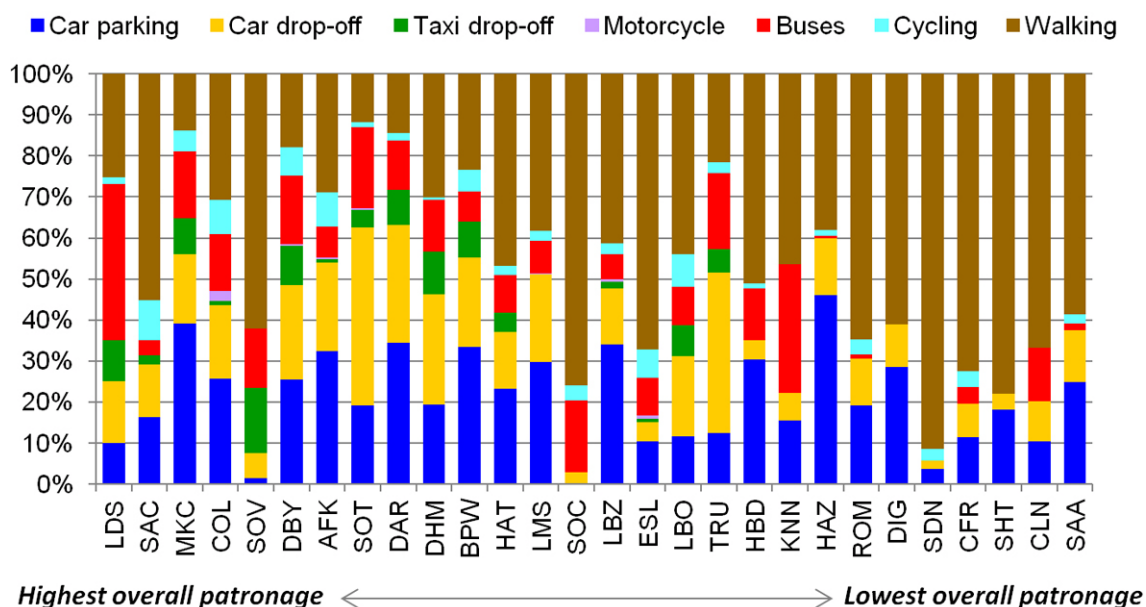


Figure 11 - Modal share, sorted by patronage, (Data source: 2011 weighted survey)

7.1.6 Car parking

Four stations collected additional measurable evidence relating to car parking, as shown in Table 23.

Milton Keynes Central, Leeds and Durham provided manual counts, with counts at Milton Keynes being conducted once per quarter (see Appendix B4 for details). Bristol Parkway provided automatic counts from the car park ticket barrier, which would have included a mixture of long and short stay parking.

Table 23 - Measurable additional evidence relating to car parking
(Data source: stakeholder consultation)

Station	Additional measurable evidence	2008	2009	2010	2011	Change
BPW	Annual number of cars parked in station car park	252,656	352,547	323,692		x 1.28
DHM	Number of cars parked (2008='Base 100')	100			113	x 1.13
LDS	Occupancy of nearby car parks (%)		83.5	76.9	83.2	x 1.00
MKC	Average number of cars parked	1948	1930	2015	2029	x 1.04
MKC	Car park capacity	2581	2574	2628	2602	x 1.01

The five sources of data are summarised and cross-referenced with the changes in car parking in Table 24.

Table 24 - Comparison of car parking evidence sources

Station	'Initiatives'		'Outcome' indicators by evidence source					
	Car parking spaces	Car parking charges	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
ACR	◄◄	◄◄		△				Increase
AFK	▲▲	▲▲		△		◄◄	◄◄	
BPW	▲	◄◄	△		▽		▽	Increase
CFR	◄◄	◄◄						
CLN	◄◄	◄◄					△	
COL	◄◄	▲▲		◄◄	◄◄	△	△	
DAR	◄◄	◄◄			▽		△	
DBY	◄◄	▲▲			△		△	Increase
DIG	◄◄	◄◄						
DHM	◄◄	▲	△		▽		◄◄	Increase
ESL	◄◄	▲					△	
HAT	◄◄	▲				◄◄	▽	
HAZ	▲	◄◄				△	◄◄	
HBD	◄◄	◄◄		◄◄			△	
KNN	◄◄	◄◄		◄◄		△	▽	
LMS	▲▲▲	▲		△	▽		△	Increase
LDS	◄◄	▲	◄◄		△	◄◄	△	
LBZ	▲	▲▲					△	
LBO	▲▲	◄◄			▽	△	△	
MKC	◄◄	▲	◄◄		◄◄	△	△	No change

Table 24 - Comparison of car parking evidence sources

Station	'Initiatives'		'Outcome' indicators by evidence source					
	Car parking spaces	Car parking charges	Additional measurable evidence	Additional anecdotal evidence	NPS	Unweighted surveys commuter only	Weighted surveys	Total evidence ranking
ROM	▲▲	▲					△	
SHT	◄►	◄►						
SOC	◄►	◄►				▽	▽	
SOV	◄►	◄►			△		▽	
SAA	◄►	◄►						
SAC	◄►	▲			△	▽	▽	
SDN	◄►	◄►					▽	
SOT	▲▲▲	▲		△			△	Increase
TRU	◄►	▲		▽			▽	Decrease
△ Total	8	14	2	4	4	5	13	6
◄► Total	21	15	2	3	2	3	3	1
▽ Total	0	0	0	1	5	2	8	1
Total [blank]	0	0	25	21	18	19	5	21

Milton Keynes was used as an example in Section 4, where there were large increases in the car parking modal share in the unweighted data (12% to 46%). After re-weighting the data, this increase was smaller, but still more than doubled (17% to 39%). However, quarterly manual car park counts were available, which showed that there was only a very small average increase in cars parked ($\times 1.04$), from 1,948 cars parked in 2008 to 2,029 cars parked in 2011. In this case the additional car parking evidence is

clearly more reliable, and so Milton Keynes Central was classified as 'no change'.

The extent to which the car parking modal share was wrong for Milton Keynes, in both the unweighted and weighted surveys, suggests that increases in car parking data for other stations may also be biased, so the additional evaluation evidence has been treated as more reliable.

Taking it at face value, the evidence suggests that there were increases in car parking at six stations, no change at one and a decrease at one. However, there is evidence to suggest that these increases were not necessarily at the expense of sustainable modes, but rather that they represented new passengers, as demonstrated below.

The largest relative increase in car parking spaces happened at **Stoke-on-Trent**, where the total number of car parking spaces more than doubled from 202 spaces to 502 spaces, due to a third TOC-operated car park being opened. A 'large increase' in the amount of cars parking was noted through anecdotal evidence. In the weighted survey data, a large increase was also noted with modal share increasing by a factor of 1.49 (from 13% to 19%). At the same time, the combined modal share of cycling, buses and walking decreased by a factor of 1.38 (from 45% to 33%). However, it is of note that Stoke-on-Trent experienced very large passenger growth from 1.7 million in 2008 to 2.4 million in 2011, which was the largest growth experienced by any of the stations. When the modal share is multiplied by the patronage data, the estimated number of people accessing the station by foot, bike and bus is approximately the same, with a small increase from 766,000 to 769,000. Furthermore, this is likely to be a worst case scenario, because it is likely that car usage is under-represented in the baseline weighted survey.

Leamington Spa also had a large increase in car parking capacity from 161 to 392 spaces. The feedback from the stakeholder consultation was that the small TOC-operated car park had been at capacity for a number of years, and a new 200-space car park had been privately opened on undeveloped land near to the station with cheaper parking charges. There was also anecdotal evidence that the growth in usage was substantial. There are contradictory trends between the weighted survey and the NPS making further analysis inconclusive.

7.1.7 Car drop-off and taxi drop-off

In conclusion, the station with the largest increase in car parking capacity experienced the largest increase in patronage, but the number of people accessing the station by sustainable modes may also have increased slightly, suggesting that increased car use was not necessarily at the expense of sustainable modes.

There was no additional measurable evaluation evidence to assess the impact of the STPs on levels of car drop-off or taxi drop-off.

The only additional anecdotal evidence regarding car drop-off was a comment from Leeds, which noted that 'the drop-off point is often used for short-stay car parking (ie car pick-up) and enforcement is planned to solve this'.

The only anecdotal evidence regarding taxi drop-off was from the taxi-share scheme at Milton Keynes Central. The scheme was implemented following the launch of the STP, but following three months of promotion, only seven passengers had registered an interest and, as a result, the funding was withdrawn.

The results from the three surveys are summarised for car drop-off in Table B8 and for taxi drop-off in Table B9, both in Appendix B5. The results for car drop-off are generally quite inconclusive with no additional evidence, but the surveys suggest that there may have been increases at Bristol Parkway and Leamington Spa, and decreases at Loughborough, Southend Victoria and St Albans City. Similarly, the results for taxi drop-off are generally inconclusive, but the surveys suggest that there may have been decreases at Durham and Milton Keynes Central.

It should be emphasised that car and taxi drop-off make up a substantial proportion of the modal share, in particular for the larger stations. Modal share, sorted by patronage, (Data source: 2011 weighted survey) shows that the combined modal share of car drop-off and taxi drop-off is typically between 25% and 50% for stations with annual patronage of greater than one million.

Although car and taxi drop-off are not necessarily 'sustainable modes', there is a subtlety in that, because they enable trips to the rail station, the end-to-end journey that results is likely to be more sustainable than if the alternative would have involved driving the whole journey. It is feasible that if the provision of facilities is insufficient, some passengers will choose to make the whole journey by car, instead of using rail. This relates directly to the

'increasing patronage' objective. It is also important to understand how drop-off activities interact with the users of other modes, since there may be direct implications for the attractiveness of other modes.

7.1.8 Motorcycles

Three stations collected additional measurable evidence relating to motorcycles, as shown in . Each of these was collected at the same time as cycle counts.

Table 25 - Evidence on motorcycle parking

Station	Additional measurable evidence	2008	2009	2010	2011	Change
KNN	Average number of motorcycles parked			0.0	0.0	x 1
LBZ	Average number of motorcycles parked	11.6	8.8	14.0	18.3	x 1.58
MKC	Average number of motorcycles parked	40	29.5	15.5	36	÷ 1.11

The five sources of data for motorcycles are summarised in Table B10 in Appendix B5.

Although motorcycles only make up a small percentage of the access modal share, there was evidence of increases at some stations.

For **Colchester**, **Ashford International** and **Durham**, the evidence was of the form of the motorcycle parking area was installed/increased and now it is 'full most of the time'. It is notable that Colchester saw a large increase from 'around 40' motorcycles a day to 'over 130'. As a result, a specific motorcycle parking area was designated adjacent to the secure cycle parking compound using converted car parking spaces. This increase is also indicated in the weighted surveys (x3.3) and the commuter-only surveys (x1.95).

7.1.9 Car sharing and park and ride

Car sharing schemes were attempted at several stations, but only had limited success.

There is some anecdotal evidence:

At **Ashford International**, as of Feb 2011, there were 25 members of the bespoke Southeastern Liftshare scheme and 32 registered journeys with a contact rate of 16%.

A car-sharing promotion was undertaken at **Leighton Buzzard** on National Liftshare Day on 9th June 2009, with around 250 leaflets being handed out. Results for Liftshare.com revealed that an additional 23 people from the Leighton Buzzard area signed up with Liftshare in the week following the promotion.

Four car sharing bays were installed at **Kings Norton** in July 2010 and these were 'monitored by station staff to assess the effectiveness of the spaces'.

Feedback from the stakeholder workshop in September 2011 suggested that car sharing was one of the most difficult schemes to implement at many stations, not least due to issues about who should enforce the schemes.

The option of 'Park and ride' was included as an modal option in the surveys. However, there were only a few responses at a couple of stations. There was no other evidence on park and ride.

7.2 Analysis of PlusBus data

Analysis of PlusBus single ticket data is shown in Table 26. This shows that, nationally, this is a very successful initiative, with sales of such tickets more than doubling between 2009/10 and 2011/12. Four stations chose to join the scheme as part of their station travel plan work, and many others promoted PlusBus in conjunction with other marketing and information initiatives. In total, ten stations that were already part of the scheme achieved increases in sales of PlusBus tickets which were greater than the national average, with particularly impressive increases at Leeds, Leighton Buzzard, Milton Keynes and Truro, where sales at least tripled.

Table 26 - PlusBus single tickets issued for the STP stations (Data source: PlusBus)

Stations	PlusBus ticket issues 2009/10 (P1-11)	PlusBus ticket issues 2010/11 (P1-11)	PlusBus ticket issues 2011/12 (P1-11)	Change
Accrington	0	32	51	New scheme
Ashford International	1,170	2,026	2,750	x 2.35
Bristol Parkway	1,951	4,433	5,517	x 2.83
Chandlers Ford	0	0	12	New scheme started May 2010
Colchester	2,631	4,270	6,402	x 2.43
Darlington	731	849	1,045	x 1.43
Derby	1,239	2,800	3,490	x 2.82
Durham	1,155	2,061	2,492	x 2.16
Hatfield	14,300	21,251	21,720	x 1.52
Leamington Spa	233	563	539	x 2.31
Leeds	2,959	8,203	12,797	x 4.32
Leighton Buzzard	42	130	247	x 5.88
Loughborough	35	607	2,091	New scheme started May 2009
Milton Keynes	2,363	6,340	8,964	x 3.79
Shotton	0	0	92	New scheme started Sept 2010
St Albans	5,947	8,139	10,287	x 1.73
Southend stations	2,360	3,382	3,705	x 1.57
Stoke on Trent	5,596	6,615	8,207	x 1.47
Truro	1,215	2,803	3,777	x 3.11
Total (all STP stations)	43,927	74,504	94,185	x 2.14
Total (all non-STP stations)	333,594	552,448	705,361	x 2.11

7.3 Analysis of respondents who said they had changed modes

Figure 12 provides an indication of the proportion of passengers who said that they had changed how they travelled to the station within the last two years. Across the sample as a whole, 21% had changed mode, and the proportion was over 30% at Derby, Shotton and Stoke-on-Trent. Analysis was undertaken to explore what respondents said they had changed from and to – patterns of change varied considerably from station to station, and no overall conclusion could be drawn. Overall, 4% of rail passengers explicitly reported that they had changed from car (drop-off or parked), to bus, cycle or walk – however, without information about the usual degree of churn in passenger access mode choices, it is difficult to put this figure into context.

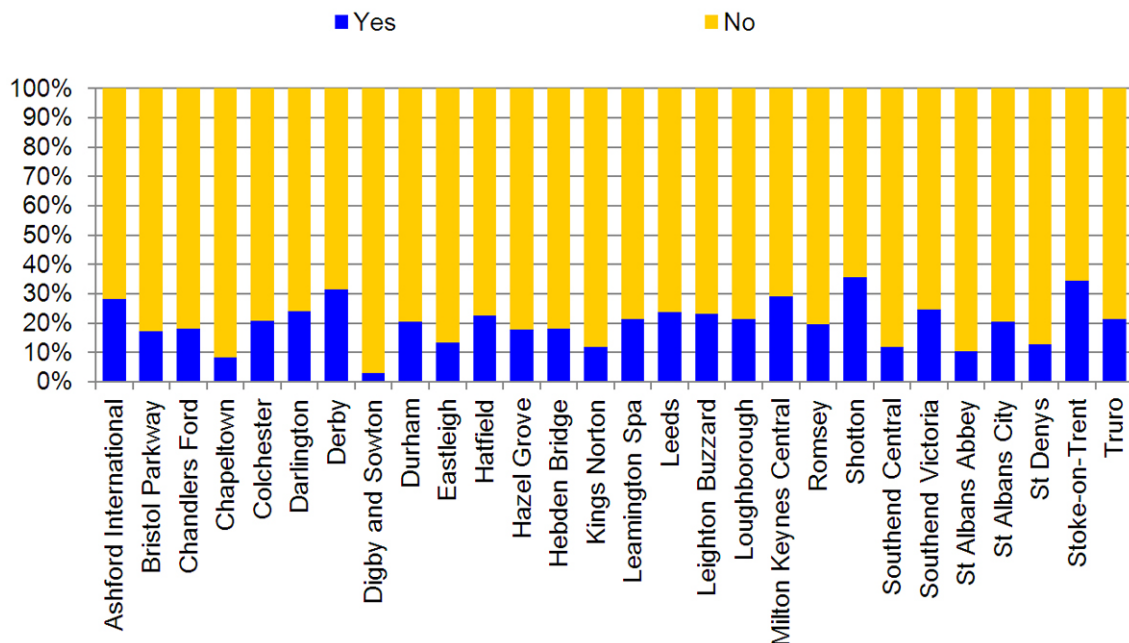


Figure 12 - Proportion of passengers who said they had changed how they travel to the station (Data source: 2011 unweighted survey)

7.4 Analysis of respondents who said they were new passengers

Figure 13 indicates the proportion of survey respondents who said that they had started using the station in the last two years. Overall, 21% of all survey respondents reported that they were new passengers, and new passengers represented 20% or more of responses at over 17 stations.

There were six stations where the number of new passengers was more than 50, therefore enabling a meaningful assessment

of their access mode choice. In all cases, more than 40% of the new passengers were arriving by bus, bike or on foot. At three (Leeds, Leighton Buzzard and Colchester), the proportion was more than 60%. At four stations, more than 10% of new passengers were arriving by bus, and at four stations, more than 5% were arriving by bike.

Given the number of other factors affecting station patronage (such as the introduction of new services), the issues with the surveys, and the fact that a high proportion of passengers choose sustainable travel modes (particularly walking) anyway, drawing conclusions about the contribution of the station travel plan work to new passengers and their access choices is problematic. However, generally, it is clear that there were new passengers during the station travel plan period, and that a considerable proportion of them chose to access the stations by more sustainable modes, and would have benefitted from the improvements being made.

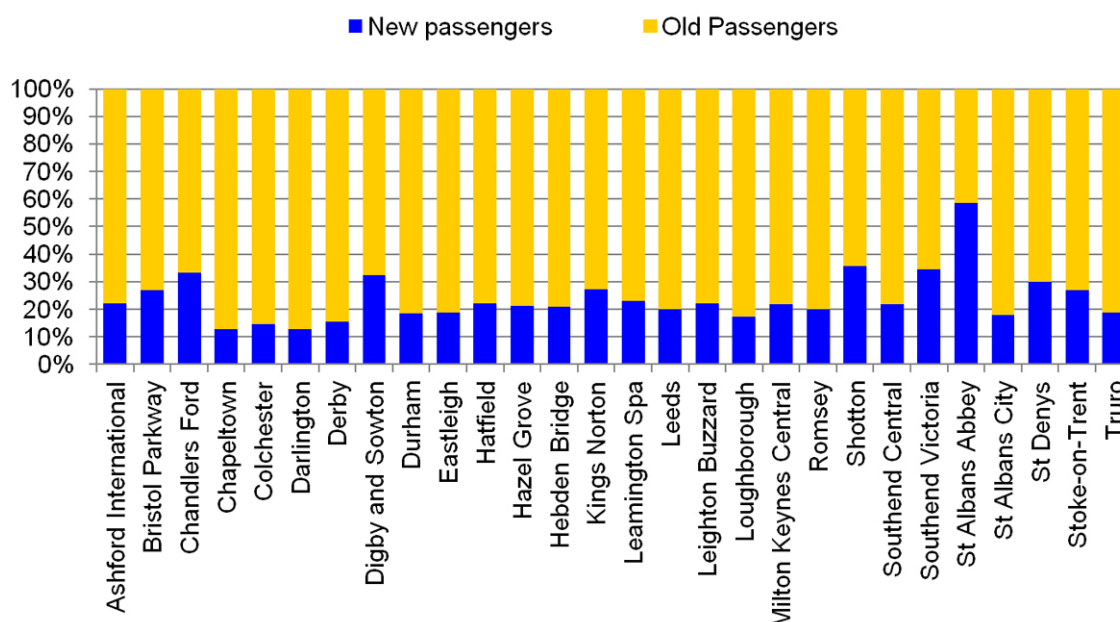


Figure 13 - Proportion of passengers who had been using the station less than two years (Data source: 2011 unweighted survey)

7.5 Conclusions

By bringing together evidence from a number of sources it can be concluded that there is:

- Good evidence of increased cycling at 12 stations (with at least one indicator of growth at eight others). The increased demand for cycling that can be expected from cycling improvements is also supported by the results of other evaluations, including the Bike'n'Ride project.
- Significantly increased bus patronage at three stations (supported by operator data at two), with at least one indicator of growth at 11 others, (and with lack of data to evaluate being a particular problem)
- Strong evidence for growth in walking at two stations (with at least one indicator of growth at 11 others).
- Increased uptake of PlusBus at 10 stations promoting it, in comparison to the national trend
- Significant numbers of new passengers and passengers who have recently changed mode

Unfortunately lack of data means that the evidence of outcomes is inconclusive at many stations. Supporting data on cycle use was more widely available than on bus use, which may therefore mean that other successful bus measures were underrepresented. With more data available, and more time allowed for measures implemented recently, greater impacts could have been observed. There is evidence for increased car use at stations where there were large increases in car parking provision. However, analysis at the two stations with the largest increases, using combined patronage and modal shift data, indicated that, in terms of absolute numbers, use of sustainable modes may have increased too.

8 The station travel plan process

8.1 Introduction

This section explores some of the key issues involved in setting up and running a travel plan. It links with Section 4, which discusses the sorts of measures which are implemented to improve access. It is based on the results of the online survey feedback; the interviews with TOCs; the quarterly progress reports; and previous overview progress reports (including SDG 2010¹¹ and Veitch 2009¹²). All quotes are taken from the smart surveys feedback, unless otherwise stated.

Sections 10 and 11 then addresses some of the more strategic issues, such as techniques for evaluating the effects of plans; which stations should be selected for involvement; the different scales of activity that may be appropriate in different locations; and the interaction between STPs and franchise agreements.

8.2 Leadership, management and involvement of external stakeholders

Management of the STPs had usually involved representatives from the TOC¹³ and local authority (LA); a small working group; and a wider steering group. As highlighted in Table 27, the majority of stations felt that this was the appropriate approach. More detail on these topics is discussed below.

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- 11 SDG (2010) Station travel plan national pilot programme. Progress report.
 - 12 Veitch A (2009) Station travel plans: National pilot programme – progress report. ATOC.
 - 13 Leeds is managed by Network Rail, not a TOC.

Table 27 - Management of the STP

	Agree/ strongly agree	Neutral or don't know	Disagree
As a minimum, all stations should have a designated person from both the TOC and the LA with direct responsibility for access to/from that station	23	5	0
Establish a small team of key stakeholders to meet regularly to move the project forward and take decisions together	27	1	0
Important to involve external stakeholders (eg town societies, disabled groups, walking groups etc)	27	0	1

Most of the TOC and LA STP partnerships, within the pilot programme, were led by the LA. Many respondents felt that this was the best approach, since delivery of some action plan elements usually fell outside the designation of the TOC, and the LA was also well placed to make links with other initiatives. However, outside of the pilots, Southern, who did take ownership of their STPs (which were a franchise commitment), reported this to be a positive experience, and felt that the TOC could be an effective lead. In some cases, elected members have acted as advocates for STPs, which has been seen of value by both the TOC and the LA. Most of the STPs nominated a specific 'travel plan co-ordinator' to lead the work.

Most organised their activities as a two tier arrangement - a wider steering group and a smaller working group to take things forward.

Having a small working group was seen as essential to get things done, and it was noted that involvement of all stakeholders at all stages could become unwieldy.

'a station travel plan requires a small group of key individuals to drive the project forward to make it a success'

However, it was also noted that early involvement of people with particular expertise could be of considerable value, in terms of both tapping into their expertise, and in terms of obtaining their involvement and buy-in to potential initiatives. In addition to the LA and the TOC, the STP partnerships had chosen to involve a range of other organisations, which included (variously) representatives from the local planning authorities (borough or district councils), bus companies, transport interest groups (such as Sustrans, or local cycling and walking organisations), taxi groups, groups representing disabled people, regeneration agencies, tourism boards, the police, local destinations including universities, schools and workplaces, regional government offices, Network Rail, Passenger Focus, and other TOCs using (but not managing) the stations. It was felt that the different perspectives could be helpful. As just a few examples, it was reported that:

- Local walking groups could provide detailed advice on key routes and associated issues.
- Tourism agencies had brought their expertise on marketing and focus on passenger needs.
- Working with local businesses could help in developing solutions suited to commuters.
- Taxi groups could be readily involved in station discussions in a way which had not previously been possible.
- Groups representing disabled passengers could help with understanding specific needs.
- For example, in their 2009 progress report, Leamington Spa commented on the value of local expertise for developing walking and cycling routes:

'When the options were presented at a stakeholder workshop, the route that officers thought to be the least convenient and safe was actually favoured by stakeholders – local knowledge is vital!'

- STP partnerships also needed a strategy to handle awareness of the STP. For example, many had chosen to hold launch events, where many stakeholders could be invited, and also needed a process of managing press coverage of individual initiatives etc. For example, in the 2009 progress report, Darlington highlighted:

8.3 Partnership working, scheduling and expectations

'the importance of managing public engagement, so as to generate positive discussion and ideas whilst being careful to manage expectations'

The 2009 report on the stations involved in the Three Rivers Community Rail Partnership also emphasized the value of:

'a focus on the station as a local hub in the community'

A number of STPs highlighted that positive partnership between the LA and the TOC was the key to success. For example:

'Partnership working has been one of the key factors that has made the Durham STP successful'

'Colchester STP worked because we had great co-operation between the TOC and LAs'

Several TOCs commented that the building of relationships was a positive outcome of the STP not just a mechanism to deliver it. For example the STP resulted in an:

'Excellent relationship with city partners and other stakeholders being built and continually developed'

It was noted that both sides had often been through a learning process, to understand the constraints and processes involved in getting things done by the other. For example, one noted that this understanding:

'enabled us to have patience with each other and deliver projects'

This included improved understanding about the timetables and schedules that both sides are working to. For example, one LA interviewee commented:

'We have learned the importance of speaking to colleagues and stakeholders as early as possible about the individual travel plan proposals, to give the best chance possible of them being delivered on time. This is especially important for proposals requiring train operator and Network Rail approval, and additional time for these needs to be factored in accordingly.'

Others noted the importance of understanding the wider processes taking place – in particular, major works likely via the

National Stations Improvement Programme, and the need to dovetail STP initiatives to fit accordingly.

One organisation stated that setting up a schedule of meetings, which ran from the beginning of the process to the formal launch of the plan had helped to secure commitment to regular meetings, reduced the hassle involved in arranging them, and facilitated the development of relationships between partners.

It was also felt to be very important to be realistic about the resources available for the work, both in terms of budgets, and in terms of time available for delivery. As shown in Table 28, almost all of the STPs felt that that this was important, and should be done as soon as possible.

Table 28 - Understanding available resources

	Agree/ strongly agree	Neutral or don't know	Disagree
The funding resources of key partners should be identified at a very early stage, so that realistic objectives can be set.	26	2	0

As well as assessing the availability of financial resources, and ensuring that there was senior management approval to use them for STP purposes, staff time was also seen as key. When compiling the progress report in 2010, SDG reported that lack of time from the travel plan co-ordinator was most frequently cited as being the primary challenge to plan implementation, and many of those involved stated that they had not appreciated the time that might be required for the work. SDG reported that the travel plan co-ordinators typically devoted one - three days per week to developing the travel plans, and up to half a day a week during implementation. SDG also commented that, given the substantial time required:

'In many cases, it is unlikely to be sufficient, for example, to add the role of a travel plan co-ordinator to an existing full-time staff member's position description'.

In terms of achieving positive outcomes, in the final survey, several interviewees commented that the involvement of

enthusiastic staff was key to success, whilst staff turnover could be a major problem, and result in loss of impetus.

In terms of delivery, having some early wins was often seen as beneficial for morale and impetus. For example, in the 2009 progress report, Hazel Grove commented:

'it is important to identify achievable, low-cost 'quick-win' solutions to get the initiative up-and-running.'

Improved provision of cycle facilities and delivery of marketing/ communication initiatives proved some of the easiest initiatives to implement – and some TOCs commented that the marketing and communications work had delivered more tangible benefits than expected. For example, one TOC noted that;

'Publicity and communications has been the most successful and has assisted walking particularly at the expenses of taxis as the information board shows people the distances to their destination.'

Another said:

'Generally, marketing and communications has been a very important part of our efforts to promote sustainable access modes, particularly bus'

Small-scale measures to improve facilities for pedestrians could also be delivered fairly quickly. Obtaining positive press coverage for such activities also had beneficial effects.

More expensive physical measures, such as forecourt redesign, highways works, moving bus stops or provision of real time bus information had sometimes been cancelled, or were awaiting uncommitted funding, and it was felt to be important to recognise that these measures were likely to take longer to implement. However, this did result in some disappointment amongst TOCs, for example:

'The local authorities have not been able to follow through the more major highway schemes that are more costly and difficult and it is difficult to see how this would happen in the future with the current climate in local government'

Initiatives relating to car parking and car sharing could also be problematic (as discussed further in Section 4). Several TOCs noted that this was the most difficult element of the STP to pursue. For example:

8.4 Station auditing, monitoring, evaluation and developing action plans

'Car sharing and taxi sharing has proven very difficult to get started. These have been looked at, but multiple occupancy of cars is difficult to manage at our car parks and the taxi firms are resistant to sharing.'

In the action plan, grouping initiatives by timescale of delivery was felt to be potentially helpful, to ensure that all involved had realistic expectations as to what would be delivered, and by when.

It was generally felt that STPs will always need to be specifically tailored to meet the needs of the particular users of the particular station. It was therefore felt that developing an individual STP required a detailed understanding of that station, and what would make train travel an attractive option to potential users in the surrounding catchment.

'To successfully deliver a station travel plan requires a very good knowledge of how your local station 'works''

In order to compete with the car, 'STPs need to look at all aspects of the station (including access and egress) and develop whole-station solutions, for example, improving on platform facilities, extending ticket office opening hours etc.'

The need for tailored solutions was partly demonstrated by the diversity of stations within the pilots. For example, Southend stations see themselves primarily as destination stations. Of the stations studied, Leeds, a Category A station, has the highest number of passengers outside London, and is managed by Network Rail, and used by a number of TOCs. In contrast, Chandlers Ford, St Denys, Romsey and Eastleigh are much smaller, and their joint STP has been led by the Three Rivers Community Rail Partnership.

To understand the stations, and to develop action plans, the partnerships had undertaken a variety of activities including Site Audits, passenger surveys, additional monitoring activity, consultation events, etc.

Each of these methods had particular strengths and weaknesses.

Site audits had helped to provide a comprehensive picture of the detailed issues with access and egress from the station. As well as understanding the provision of facilities, it was also important to understand vehicle movements and the interaction between different user groups.

Passenger surveys are expensive, and there are substantial problems with getting a representative 'cross-section' (see Section 4.1). However, one respondent commented that the surveys were useful in highlighting the proportion of passengers accessing the station on foot, which was much higher than previously thought. Another commented that survey data had indicated that passengers were not aware of existing bus service frequencies, and had invested in appropriate marketing and communication activities as a result. Levels of car drop-off are also often higher than anticipated, meaning that planning for this access choice may also be important. Another respondent highlighted that, for planning marketing, it was important for them to understand where passengers were coming from. However, several TOCs also noted that the action plans had not been significantly influenced by the passenger survey results and were largely derived from the Site Audits or existing knowledge of problems or opportunities at the station.

Consultation events and site visits had also been arranged. SDG reported that consultation events had proved to be particularly useful in securing buy-in from a broad range of stakeholders. One interviewee commented that simply getting all of those involved in the process to actually visit and walk round the station had been beneficial to understanding. One TOC was particularly positive about a launch event that had been held to promote the STP, involving personalised travel planning;

'The focus of having a big launch of the STP and the access to personalised travel planning was very successful. During the launch, we got passengers to stop and fill in a form about their journey needs. If they returned it, they got a travel mug and were put into a draw to win a fold up bike. They also had breakfast such as croissants and coffee available. This enabled us to achieve a really good response rate. We won an integrated transport award at the Rail Business Awards'

Many stations had also chosen to engage in additional monitoring activity, such as counts of bikes, or cars parked, or obtaining bus passenger data from the operator etc. These monitoring activities have their own issues, in terms of ensuring accuracy (see Section 5.4). However, they can be relatively straightforward/cheap to conduct; can be undertaken relatively frequently; and may provide useful direct evidence that new facilities or services are

being used. One interviewee commented that proving the value of marketing activity had been a substantial hurdle in obtaining funding for it– as a minimum, keeping a record of the take-up of resources can help to show that they have proved popular.

SDG reported that, after evidence gathering, the subsequent drawing up of action plans had been relatively straightforward, but that there had not necessarily been sufficient consideration about the detail involved in individual measures, either in terms of how they would be specifically implemented at the stations, or in terms of the resources required for delivery. They recommended that future action plans should subject to more rigorous audit of these issues before being finalised.

In one of the quarterly progress reports, one station commented on the need to be clear about the interactions between the action plans, and other activities by those involved:

'A balance has had to be sought between respecting the responsibilities of key parties and ensuring that the aims of the STP are implemented. Much, however, has been solved through judicious and sparing use of language, and this has proved to be surprisingly effective at removing concerns and the resulting barriers'

Another station commented that the action plan needed to be a 'live' document, since changes in the wider context, and within each of the partners involved would inevitably mean that initial plans would need to be subject to change and review over time.

Finally, there was some discussion about how success would be measured. As discussed further in Section 5.4, this is inevitably problematic, both due to the complexities of accurate measurement, and because of the difficulty of disentangling the effects of the STP from other changes taking place. This could include unrelated factors (such as changes to services, or to the nearby catchment) or due to other projects which could also have the effect of improving access choices. As the Southend stations 2009 report highlighted:

'The STP will be part of a suite of plans and strategies, which together will help to unlock significant funding for projects within the town centre. Establishing 'cause and effect' and the true impact of the plan against measurable targets may therefore be more difficult'.

8.5 Funding

Some stations did start their station travel plan work with allocated funding, but most did not. Of those which did start with specific funding, some subsequently had their funding altered, not least due to more general local authority budget cuts caused by the economic situation. For those which did not have allocated budgets, their approach was to access funds where possible.

'We knew there were pots of money available and it was our intention to use these to deliver the projects, but we had no guarantee of this money being put into the STP'

Levels of spending varied significantly. For example, it ranged from five to ten thousand pounds on say, marketing activities or improving lighting, through to several million pounds on infrastructure works and/or improvements to buses.

In a number of cases, it was reported that the STP process had helped to gain access to internal funding within either the TOC or the LA. It had also acted as the focus for a range of different things that were already occurring. As one respondent described:

'the Travel Plan was really the glue that brought a number of other initiatives together'

Via the STP process, the partnerships were also able to draw on a range of related funding sources to achieve their objectives, as described further in Section 9. Specifically, about a third of the stations reported that the STP had *'helped stakeholders to win additional funding from other sources for measures relevant to station access'*.

9 Wider benefits of the station travel plans

Stations were asked about whether they perceived that there had been benefits from their work over and above delivering the station travel plan. In most cases, it was reported that there had. A summary of responses to three specific questions is given in Table 29. Specifically, about two-thirds of stations that responded felt that there had been indirect/wider benefits; that relationships between stakeholders were improved; and that funding had been generated to help improve facilities for customers. The next section discusses some of the reported benefits in more detail.

Table 29 - Opinions on wider benefits of station travel plans

	Agree/ strongly agree	Neutral or don't know	Disagree
There have been lots of indirect and/or wider benefits of the station travel plan process	18	7	2
One of the main benefits of the station travel process has been the relationships that it has built between stakeholders	20	5	2
Funding from partners contributed significantly to improving facilities for customers	23	3	2

9.1 Improved joint working arrangements, and further project work

A number of stations reported that the station travel plan process had helped to build and strengthen relationships and communications. This had often had spin-off benefits in terms of joint work on other initiatives that were not necessarily related to the station travel plan. It had also helped to increase the visibility of related activities. As examples:

- In Durham, the joint working was reported to have helped with a more focused approach to rail passenger needs on university open days, and during major events.
- London Midland are applying lessons learnt from the pilots in the further development of Wolverton station.
- At Kings Norton, it was possible to streamline the marketing activities for the STP and the separate 'Pershore Road Travel Choices' project, with benefits to both.
- At Shotton, showing the high numbers of people living within five km of the station had helped to strengthen the case for more train services.

9.2 Leveraging of funding

As already reported, most of the station travel plans did not start with a designated budget, but were able to leverage funds from other sources. In addition to potentially gaining greater access to LA and TOC funds than might have been possible without the partnerships, the STPs were also able to draw on funding (or had applications in for further funding) from the following sources (often as part of wider initiatives):

- Section 106 and other developer contributions
- The Cycling Towns and Cities programme, and other Cycling England funding
- Sustrans/Big Lottery funding
- National Station Improvement Programme
- Network Rail 'Access for All' funds
- Train Operator Franchise commitments
- EU Interreg IVB programme
- Highways Agency
- Department of Health regional fund
- DEFRA air quality funding
- DfT Green Bus Fund
- DfT Congestion Performance Fund
- Kickstart public transport funding
- Local Sustainable Transport Fund

In one case, it was noted that a car club had been prepared to place a vehicle at the station, since they knew that there was a wider strategy in place to promote sustainable travel.

9.3 Winning awards

Several stations reported that the STP had contributed to the station winning awards. For example:

- Durham reported that the STP had added weight to the applications which Durham made for 'Station of the Year' award. Durham won Station of the Year award in 2009, and was shortlisted for the award in 2011. East Coast also received the Integrated Transport Excellence award (part of the Rail Business Awards) in February 2012; the travel planning work at Durham station was a large part of the submission.
- In 2010, Ashford reported that it won both the Integrated Transport Excellence Award in the HSBC Rail Business

awards, and Station of the Year in the ATOC Cycle Rail Awards, partly helped by the STP work.

- The STP was also seen as being a contributory factor to other designations. For example:
- Being a pilot STP was reported to help win 'cycle town' status for Leighton-Linslade, with associated funding.
- Digby and Sowton was awarded 'Secure Station' status, partly following STP activities.
- The STP had also helped to achieve high profile recognition for some stations. For example:
- In January 2011, the Transport Minister visited Bristol Parkway station to look at the cycling improvements, with associated press coverage.

10 Conclusions and recommendations on monitoring and evaluation

As discussed earlier, experience from the STP pilots showed that monitoring proved to be a significant challenge, being resource-intensive and difficult to organise, while the difficulties of obtaining truly representative random samples leads to biases that are very difficult to avoid. These factors make analysing the data into a technically demanding task that is likely to be beyond the resources available for most STPs. The remainder of this section provides discussion on the lessons learned from the pilots in carrying out different forms of monitoring and sets out some recommendations for future implementation.

10.1 The Site Audit

The most influential source of information used by the STP pilots in developing their Action Plans was reported to be the Site Audit, which was carried out using the template provided in the ATOC Toolkit. The Site Audit provides a framework for the systematic collection of key information about the station, including information on the availability and use of car parking spaces, cycle racks etc, information displays, availability and quality of bus services and interchange, and quality of pedestrian routes to the station.

In the pilots, the Site Audit was generally only carried out at the start of the programme, to inform the development of the action plan. In general, it was not updated, which meant that information on many of the areas identified for improvement was not routinely captured. It is therefore recommended that the Site Audit is updated periodically throughout the duration of the STP and used as a tool to monitor its progress. The current survey template has been found to be helpful, however there is scope to improve it in the light of experience from the pilots. In particular, it could be updated to record data from counts and local surveys in a more consistent format, facilitating the use of the Site Audit as a tool for routine progress monitoring. It would also be helpful for the Site Audit template to reference external guidance to provide a basis for quality assessment of facilities, for example to ensure that cycle parking not meeting current standards of good practice is easily identified. Specifically, ATOC is currently developing the 'ATOC Cycling Toolkit', which will provide guidance on how to improve cycling facilities at stations.

An important element of the Site Audit is to assess the suitability of drop-off/pick-up and taxi waiting areas. These often represent

large modal shares but were not given as much attention as other modes in the pilot Action Plans. Particular areas of attention for assessing in the Site Audit are:

- Conflicts between drop-off and pick-up modes, as these may present a danger to pedestrians, cyclists, or bus users. If conflicts are observed or if modes are picking up or setting down where they should not, it is possible that the location and capacity of the provision is not sufficient and needs to be re-considered.
- Signposting of the set-down area for bus, car and taxi drop-off, the convenience of the location, and adequacy of capacity for the level of drop-off activity. It should be monitored so that it is not abused by other modes (eg car pick-up, taxi pick-up, buses).
- Signposting to the short stay car park, the convenience of its location, adequacy of capacity for the level of pick-up activity, in particular in the PM Peak.
- Capacity of the space available for taxi pick-up.

It is recommended that manual counts are undertaken to record both the location and the frequency of car drop-off, car pick-up, taxi drop-off and taxi pick-up.

10.2 Counts of car parking spaces and occupancy

As part of the Site Audit, a count should be undertaken of car parking spaces available to station users, and their level of occupancy. Regular monitoring of these provides a relatively robust indicator of demand, as long as a consistent basis is used for measurement. Clearly it will not always be possible to count every station user who parks their car in the vicinity, as it will not be possible to differentiate station users from other members of the public when parking in nearby streets, or public car parks available to all. Various approaches can be used to monitoring parking and to assess the extent of parking away from station premises. These include:

- Regular manual counts of car parking occupancy, which need to be done at consistent times, for example following the end of the morning peak. Alternatively, video can be considered, potentially using existing CCTV.
- Manual or video counts of station users walking from the car park, where these routes can be distinguished from other pedestrian routes.

- Targeted surveys of those who travel by car, taking note of the issues raised later with regard to biases that can be introduced, although this should be less of a problem when users of a single mode are targeted.
- Information from ticket sales, car park barriers. However, there can be anomalies introduced by the use of season tickets and other methods by which tickets can be purchased separately from machines.

10.3 Counts of cyclists and cycle parking

Counts of parked cycles provide an easy-to-measure indicator of demand for cycle parking, enabling the definition of targets that can be easily monitored. Experience from the STP pilots shows that counts conducted around the middle of the day will generally capture peak demand, which means they can easily be done at a relatively quiet time in the day. As a minimum, counts should be conducted every six months, e.g. Spring and Autumn, avoiding the Summer holiday and Christmas periods when demand may be lower. Ideally a count would look at the numbers of cycles parked informally, such as on railings and lampposts, as well as those in the official cycle parking area; this would be done as part of the Site Audit. By repeating the counts, it is possible to assess the extent to which new provision is meeting the needs of users. Ideally counts on more than one day are needed to take account of day-to-day variations, not least due to the weather.

Generally, an improvement in the quality of cycle parking will result in an immediate apparent increase in demand as informally parked cycles are relocated to it, so by counting both, it is possible to distinguish between relocation of existing bicycles and demand from new cyclists.

The total number of cycles parked on any one occasion does not always provide a good indication of the number of passengers who have arrived by bicycle that day. It is necessary to consider:

- Bicycles left for long periods that have only occasional use, including abandoned ones.
- The extent to which bicycles are used for relatively short duration trips, so the user may have come and gone before the count is undertaken.
- Cycles left overnight which are used for egress journeys by passengers arriving by train in the morning. Where there are large numbers of these, there may be little net increase in number during the morning peak, even though a large

number of new cycles have arrived to replace overnight ones that have left.

- Cycles carried on trains.

To understand these patterns fully, it will be necessary to make use of information on the balance between access and egress journeys at the station, local observations of user behaviour and potentially initial counts conducted at hourly intervals through the day. For the Leighton Buzzard STP, counts were taken every 30 minutes on one day, which showed a steady increase from 0600 hrs to 1000 hrs.

It may also be helpful to conduct a simple questionnaire survey of cycle parking users. This could be administered by an online survey, using simple leaflets attached to parked cycles to encourage users to respond. For this purpose, the intention would be primarily to obtain qualitative information so concerns about statistical significance and representativeness are not a major concern.

The extent to which cycle carriage on trains takes place will vary considerably depending on location, common final destination of cyclists, and the extent of restrictions on cycle carriage.

Furthermore, increasing numbers of cyclists use folding bicycles which are not subject to restrictions. Capturing information on these users is very difficult. Although passenger surveys can be designed to request information on all the different ways in which cycles are used, problems noted elsewhere with obtaining consistent and representative samples make it very hard to use survey responses as an accurate predictor of the total number of cyclists. Manual counts of people entering stations and boarding trains can be used, similarly video analysis, however this can be time consuming and expensive, and still prone to error, not least because of the under reporting of folding cycles being carried as luggage.

10.4 Pedestrians

Pedestrians are often the single largest group of passengers in terms of access and egress mode, but can be very hard to count accurately. In particular, it is difficult to differentiate those who have walked for the whole access journey from those who have walked from a nearby bus stop or parking space. As walking usually has very predictable journey times, regular rail travellers are likely to allow limited waiting time at the station which can

leave little time for surveys. Methods used for counting pedestrians include:

- Cordon counts, usually involving observers with ‘clicker’ counters standing at locations around the station to cover all approach routes. Accurate counts can be difficult with large numbers and where there is crowding.
- Video surveys (not undertaken by any of the pilots), which can provide more accurate counts as the camera can provide a view from above, and the analyst can slow the speed at which the video is replayed to reduce the risk of missing or double counting. These can be cheaper than manual counts as fewer staff are needed and equipment can be left unattended for long periods.
- Automatic counters – including employing light beams, pressure mats, or other mechanical devices, usually only practicable at barriers and narrow paths or entrances where passing pedestrians can be confined sufficiently to enable them to be distinguished from each other.

Counts can potentially be applied for selected periods, for example a peak hour in the morning and evening. As long as the time period chosen is consistent, and not affected unduly by changes in the rail timetable, such a snapshot count can provide a useful indicator for monitoring trends in pedestrian numbers.

10.5 Information from bus operators

Many STPs were able to benefit from obtaining information from local bus operators on the number of passengers travelling by bus to the station.

Useful data for evaluation includes:

- Ticket sales (which may have restrictions because of confidentiality)
- Frequencies of services
- Number of routes
- Users of PlusBus or other multi-operator or multi-modal tickets

Leighton Buzzard conducted counts of the number of people alighting from buses at the station. This measure can be a very good indicator of the number of people accessing / egressing the station by bus and it is recommended that this is used where possible. Video surveys could be used for this purpose and peak snapshot counts can be used to minimise costs. However, such

counts may not be suitable for all stations; for example, when the bus stops are not adjacent to the station or are used by other passengers as well as station users. This is particularly true in city centres or at bus stations.

10.6 Passenger surveys

Surveys were a major element of data collection in the pilot STPs, and many targets were based on modal shift to be measured by surveys. However, experience from the evaluation project and elsewhere shows that surveys have a number of disadvantages, in particular that while being quite expensive, it is difficult to obtain accurate measurement of modal shift because of difficulty obtaining consistent and representative samples before and after measures are implemented. Problems identified include the following:

- Modal choice varies significantly between different groups of passengers, for example with younger passengers and students being less likely to travel by car; and cycling often being more convenient for regular travellers and commuters than for leisure travellers with luggage. As a consequence, even small changes in the representation of different groups can make a large difference to the measured modal split of journeys.
- The survey method used would be expected to lead to very different response from different groups of passengers, for example face to face interviews of passengers arriving may require too much time for regular passengers who are likely to plan their journeys to arrive with minimal waiting times. The 2008 baseline survey, done by face- to- face interviews, showed lower levels of commuters and much higher levels of young people and students than the 2011 survey, and National Passenger Survey, both conducted by self-completion postal survey. This may at least partly explain the significantly lower levels of car use reported in the baseline survey.
- Surveys are very vulnerable to short-term influences that occur on the day the surveys are conducted. This can include things like maintenance work in or near the station affecting the routes people take, disruption to rail services, unusual weather, or local events that bring unusual flows of passengers. It is not always possible to control fully for such events, yet this could significantly affect the results of a survey.

- Self-selection bias can occur because the people most likely to respond to surveys are those who have strong opinions on their journey, which is likely to bias the responses towards regular travellers; and to those modes where there are particular problems, or where the most significant or highly publicised changes have been made. This will be a particular problem where the survey is associated with a particular intervention. For example, the recent evaluation of the Bike N Ride projects¹⁴ used both counts of parked cycles and face-to-face surveys. Significant increases in uptake of cycle use were observed following improved provision of cycle parking, however the change in modal share reported from the surveys implied a greater modal shift than would be expected from the change in parked cycles, suggesting that the survey sample disproportionately represented cyclists.
- As users of different modes may use different routes and entrances to the station, response rates from different modes can be affected by the location of the survey staff. This will be very hard to control for, since even minor changes to the layout of a station and its entrances between surveys could make a significant difference.
- Journey purpose varies significantly by time of day, so it is necessary to ensure sampling is conducted throughout the day, and that timings are made consistent between surveys if possible. Recording the time of the train used the respondent, as done in the NPS, makes it easier to re-weight data by time of day, however this requires a large sample to be obtained in the off-peak, requiring significant survey staff costs.
- There is evidence that response rates to surveys vary significantly with socio-economic group, as does use of different modes. For example, anecdotal evidence from PlusBus was that bus users can be hard to survey.

Problems arising from differences in sample composition can be addressed through using more sophisticated analysis techniques, for example re-weighting the samples to achieve consistent representation by age, or journey purpose. An alternative approach would be to focus on one particular group of users, such

14 MVA Ltd, 2011 Bike N Ride Programme Evaluation, Final Report for ATOC

as commuters, for purposes of making comparisons. However, both these approaches require much larger sample sizes to be achieved than would be needed for statistical significance if totally randomised samples could be obtained. This will both greatly increase survey costs, and also requires resources for carrying out more complex analysis of the results. Clearly, the practical difficulty of achieving large sample sizes at stations with lower footfall is also a consideration, with disproportionately high survey costs entailed to order to obtain large enough samples. Nor is it certain that this will be sufficient to resolve the problems of inconsistent sample composition observed between the different surveys considered in the pilot evaluation and in the other evaluations that have been considered.

This means the modal share reported from passenger surveys should be regarded as indicative only, and supporting evidence, such as counts, bus use data etc should be considered to be a more reliable indicator of actual numbers. However, the survey response can be very helpful in obtaining qualitative information from users, and other information on travel patterns, such as travel distances (permitting geographic analysis if postcodes are requested). It is therefore suggested that they may be beneficial when major schemes are being planned, forming part of the public consultation. As long as it is understood that such surveys are not necessarily fully representative of all station users, lower cost methods such as online surveys can be used for this purpose.

Focusing analysis on commuters would be a justifiable approach, as experience has shown that good response rates can be obtained from this group with self-completion surveys. This group is also an important target, generating peak demand for car parking spaces. Being regular travellers they are more easily targeted, and, also, any change in their behaviour affects a larger number of trips than is the case for an infrequent traveller. Also, there may be opportunities to link measures targeted at commuters with workplace travel plan initiatives in the area. Nonetheless, larger sample sizes are needed in order to obtain enough in the target group.

10.7 Recommendations for monitoring Station Travel Plans

- Monitoring, irrespective of the methods used, has to be undertaken at regular intervals, so that a trend can be assessed over time, rather than reliance placed upon a single before and after comparison at only two points in time.
- The Site Audit is a key tool in identifying where improvements are needed and capturing quantitative data on current provision and use of transport services. The Site Audit should be repeated regularly, at least annually, as a monitoring tool for STPs.
- The Site Audit template provided in the ATOC toolkit could be considerably updated, to streamline data collection and provide more consistent data recording for long term monitoring; potentially to provide a simpler version for use in lower level STPs, or ongoing monitoring where there is no STP; and to provide clearer guidance on how to assess quality against accepted good practice guidance.
- Passenger surveys should not be used as the primary basis for setting targets or monitoring progress of Station Travel Plans; instead more easily measured and repeatable indicators based on local counts, and linked to local objectives, should be used as far as possible.
- Local counts and bus user monitoring should be undertaken consistently and regularly to enable ongoing monitoring of the use of different access and egress modes, independently of surveys.
- Undertaking surveys and counts is resource intensive, so the extent of these activities needs to be appropriate for the scale and scope of the individual Station Travel Plan. At the start of the process, information on all access modes is needed, to help identify where there is potential for improvements that have a business case and to develop the Action Plan. However, once the STP is at its implementation stage, ongoing monitoring can be focused on those modes that are the subject of specific measures, so as to ensure expected benefits are achieved and to identify any problems so that corrective action can be taken if necessary. In particular, if ongoing monitoring shows that a specific initiative is over-capacity, this can be used for justification of further investment in additional facilities. A much lower level

of ongoing monitoring is needed for modes where little or no changes are to be made.

- The National Passenger Survey should be used both as a source of additional modal share information and also to provide an independent guide to the journey purposes and demographics of station users. Further changes to the NPS may also be desirable.
- Where additional surveys are commissioned, these should, as far as possible, follow the NPS methodology and questions to ensure consistency. The NPS is collected using self-completion questionnaires, which are less costly than face-to-face interviews and avoid delaying passengers who may have little time available for an interview.
- To reduce the risk of self-selection amongst respondents, surveys should be presented as neutrally as possible, providing very limited information on the intended purpose of the survey and avoiding linking it to any particular scheme, mode or intervention.
- Where STPs are already under way that use passenger surveys as a baseline, it is recommended that a review is undertaken of the baseline data to ensure that any sampling biases are identified, for example using the NPS as a comparator, which may permit corrective action to be taken in any follow-up surveys. It is also recommended that, if not already being done, local counts are undertaken regularly and other sources of travel information identified, and the Site Audit updated, to provide an alternative method for monitoring progress.
- A lesson for future evaluation projects of this kind is that the evaluation methodology needs to be designed from the outset of the programme to be evaluated, to ensure that the required data are collected and that evaluation methods are fully tested while there is still time to refine the process.

Further research is needed by the rail industry into techniques for monitoring different modes of access to stations, including passenger survey techniques, so that more definitive guidance on best practice can be developed.

11 Conclusions and recommendations on the future implementation of STPs

11.1 Introduction

This section draws together the main findings from the evaluation study and sets out a number of recommendations for future implementation of Station Travel Plans, based upon the experience of the pilots. Recommendations have been grouped under the following headings:

- Successful initiatives delivered through STPs
- Success factors and selection criteria for undertaking STPs
- STP management and processes
- The use of STPs as an indicators of delivering the 'end to end' journey

It is clear from the experience of the pilots that local circumstances are very important in determining the direction and success of a travel plan and that a one-size-fits all, prescriptive approach to STPs is not appropriate. Our recommendations are therefore intended to help future STPs learn from the experience of the pilots, but are not intended to provide a complete description of how a STP should be delivered at any station. There are many areas where further experience needs to be gained by the rail industry before best practice can be defined.

11.2 Successful initiatives delivered through STPs

11.2.1 Measures implemented by pilots

The pilots tried a wide range of different measures through their STP, with varying levels of success, as reported earlier in this report. As reported in Section 3, the following types of initiatives were found to be easiest to implement within STP pilot:

- Cycle facilities
- Marketing, information and communications initiatives, either to support existing facilities or services, or to promote measures undertaken within the STP
- Small scale pedestrian improvements

These tend to be schemes and initiatives that are of relatively low cost, and can be delivered within a comparatively short timescale. Crucially, they are often things that the TOCs, in particular, have control over, so are less dependent upon other bodies.

There was mixed success with bus service improvements, with improvements of various kinds at the majority of stations, including increased service frequencies in the morning peak at ten stations. However, major programmes of improvements to bus services only appear to have taken place at a relatively small number of stations.

More extensive initiatives, such as station forecourt changes or highway works often proved to take longer to implement than was originally expected, and were more dependent upon external support and funding that was at risk of being withdrawn.

Initiatives relating to car parks and car sharing were also reported to be difficult to implement, partly because of funding and timescales, and partly because of difficulty obtaining stakeholder support.

More extensive pedestrian improvements, and consideration of car drop-off arrangements, had received relatively little attention, despite the relatively large access shares that they often represented.

In many cases, measures were unable to be delivered because of cutbacks in resources available to the local authority, both in terms of funding for capital schemes and in reductions in staff resources available to support implementation. Early understanding of such external constraints is clearly an important part of developing a station travel plan.

11.2.2 Impacts on travel behaviour

As reported in Section 4 and 7, limitations in the available data from surveys and other forms of monitoring have made it hard to fully assess the outcomes of all the pilots. Nonetheless, by bringing together evidence from a number of sources, it was concluded that there is good evidence for the following successful outcomes:

- Good evidence of increased cycling at 12 stations (with at least one indicator of growth at eight others)
- Significantly increased bus patronage at three stations (with at least one indicator of growth at 11 others)
- Good evidence for increased walking at two stations (with at least one indicator of growth at 11 others)
- Increased uptake of PlusBus at stations promoting it, in comparison to the national trend

Unfortunately lack of data meant that the evidence of outcomes was inconclusive at many stations. Supporting data on cycle use was more widely available than for bus use, which means that successful bus initiatives may be under-represented.

It should also be noted that the timescale of the implementation of many schemes meant that significant changes in provision did not occur until late in the pilot programme, leaving little or no time for them to have an effect before the evaluation study was conducted.

There was evidence for increased car use at stations where there were large increases in car parking provision. However, analysis at the two stations with the greatest growth, based on combined patronage and modal share data, indicated that, in terms of absolute numbers, use of sustainable modes may have increased too.

- Of the 26 stations where there was at least some form of control data, 16 of the STP stations had shown patronage growth that was greater than their 'control' stations (a group of stations in the same region identified as comparable because they would be subject to similar trends). However, in many cases, there would have been additional or confounding local factors affecting patronage, including changes in rail service provision, changes in the station catchment etc.

The results also showed that many of the STPs have been successful at increasing satisfaction with some of the access choices available to passengers. Specifically, according to at least one of two measures used to assess this from the National Passenger Survey:

- Fifteen stations experienced statistically significant increases in passenger satisfaction with connections to other forms of public transport.
- Eight stations experienced statistically significant increases in passenger satisfaction with cycle parking.
- Ten stations experienced statistically significant increases in passenger satisfaction with car parking.

Given that the national trend has been for satisfaction with public transport to plateau, achieving improvements in this area are notable. As discussed in Section 5, not all of these stations have

11.2.3 Wider benefits achieved

necessarily worked intensively on improving actual bus service provision, so increases in satisfaction may also reflect the gains made from marketing and providing passengers with better information.

As reported in Section 8, through consultation with the stakeholders, a number of wider benefits of the STP programme were identified. Participation has improved communication between stakeholders, enabling better coordination of activities that would be undertaken anyway, for example highway maintenance, or wider travel awareness campaigns, but which can be done more cost-effectively, or deliver greater benefits, when information is shared. Partnership has also enabled many STPs to secure additional funding from external sources. The STP has helped with other partnership based initiatives, for example Community Rail Partnerships. Stations had also achieved high profile recognition for their work, including awards and positive press coverage.

STPs were found to provide good frameworks for supporting other schemes and initiatives related to station access, thereby achieving better value from existing expenditure, and in some cases helping to win additional funding.

11.2.4 Lessons for future implementation

The successful initiatives identified in the pilot programme provide examples that should be implemented more widely across the rail network. This does not necessarily have to be done through a formal STP, as straightforward measures such as improving the quality of cycle parking, or provision of interchange information using standard displays, can be taken forward by the TOC alone. However, the pilots also demonstrate that wider benefits that can be delivered through cooperation between stakeholders, in particular between TOC and LA, enabling greater value to be achieved from existing resources.

STPs have been effective in helping partners secure external funding. Stations where opportunities for such funding bids can be identified should be considered high priority candidates for taking forward for STPs.

The pilot programme was carried out on a very short timescale in comparison with typical delivery times for local transport schemes. Working over longer timescales would make it more realistic that larger initiatives could be delivered, and would also

11.3 Success factors and selection criteria for undertaking STPs

allow sufficient time for their impacts and benefits to be measured through ongoing monitoring.

The experience of the pilot programme shows that the Station Travel Plan approach is most likely to deliver benefits where at least some of the following conditions apply:

- Larger stations, such as Network Rail category A or B
- Stations with known parking problems or other access constraints that have been identified as a potential barrier to growth in use of rail
- Stations where significant rail service changes are proposed
- Stations where major developments at or near the station are planned
- Stations where major local transport schemes are proposed
- Stations where a funding opportunity arises, for example a Section 106 contribution from a nearby development

These are all indicators that there is potential to influence a significantly large number of journeys to make the investment in a travel plan worthwhile; or that there are opportunities to make significant changes in the provision of access modes; or that there is the potential to achieve synergies through coordinating activities between different stakeholders.

Other success factors that suggest good potential for a STP are:

- Local authority commitment to the process, ideally with dedicated staff resource allocated to it
- Existing local authority travel awareness and 'smarter travel' programmes that can support station travel initiatives
- An opportunity to use the STP to secure additional funding
- Schemes or LA initiatives that have potential to influence station access being included in the latest local authority Local Transport Plan

The above criteria do not lend themselves to a simple categorisation of the pilot stations. Both successful and unsuccessful schemes were reported across a range of types and sizes of station; identification of stations that have the greatest potential to deliver benefits through a STP will require careful consideration of the individual circumstances against all the above criteria.

11.3.1 Recommendations

- As there is not a clear pattern for which stations are most likely to be suitable for STPs, but rather a range of criteria that indicate potential, we do not propose a prescriptive definition of which stations should be taken forward for STPs. We would however suggest that TOCs use the above criteria, in consultation with their local authorities, to select an initial list which can be subject to a more detailed analysis, and priorities and measures agreed taking account of resources available to both parties.
- Going forward we would recommend that many of the approaches and tools used in STPs are applied more widely, so that, as a minimum, all TOCs should produce an overall 'station access strategy' (as discussed in the next recommendations section).
- The management structure, reporting and monitoring requirements, resources devoted to surveys etc for a STP should be proportionate to the potential benefits that might be achieved and level of activity proposed. For smaller stations, 'light touch' STPs based on groups of stations would be appropriate.

11.4 STP management and processes

As discussed in Section 8, stakeholder consultation provided some valuable insights into how STPs were managed and delivered, and, from this, some key messages were obtained:

- Management of STPs should be led by small, focused, working group with representatives from the TOC and LA; other stakeholders would sit in a wider steering group for the project. It is useful to engage this wider group early in the process in order to tap into specialist expertise.
- Ideally there should be a single nominated travel plan coordinator.
- It can be very helpful to use elected council members as advocates/ champions of the STP.
- Positive partnership between TOC and LA is essential for the success of the STP, but was also reported as a positive outcome by many of those consulted in the evaluation.
- There needs to be a strategy to manage awareness of the STP.
- There has to be recognition that there will be a learning process for both sides, helping each to understand the (often complex) processes and timescales of the other, and building the basis for future collaborations.

- It is important for all partners to understand wider processes and other initiatives that can have major impacts on station access, such as the National Station Improvement Programme (NSIP), not least because these can have the ability to deliver more significant schemes than are available to the STP.
- It is valuable to schedule regular meetings, setting timetables long in advance to ensure commitment and availability of key members.
- There is a need for realism about timescales for delivery and budgets available.
- The importance of staff time needs to be recognised, together with management commitment to providing it. Many STPs reported underestimating staff time required - it is unlikely to be realistic to add STP coordinator role to a single person already fully deployed.
- It is important to be able to identify those measures that are easiest to implement in order to achieve some 'quick wins'.
- STPs must be tailored to the needs of local users of the station; a detailed understanding of the station and its users is essential.
- Site audits help to provide a comprehensive picture of the detailed issues with access and egress. As well as understanding provision of facilities, it is also necessary to understand the interactions between vehicles and different road user groups.
- Consultation events and site visits can be useful in securing buy-in from a broad range of stakeholders. Simply getting all those involved in the process to visit the station had been beneficial to understanding.
- The Site Audits were key to the development of Action Plans; passenger surveys less so, though the qualitative information was sometimes helpful.
- Being able to demonstrate success through appropriate monitoring is essential for securing further support.
- It is important to recognise the role that STPs can play in facilitating the delivery of other initiatives: the STP 'being part of a suite of plans and strategies...', and 'glue that brings initiatives together'.

11.4.1 Recommendations

- It is recommended that STPs should be led by the TOC, as part of the franchise process; however this would be with the recognition that many of the actions that might be needed lie outside the power of the TOC to deliver, so LA support is essential for a successful travel plan. It is therefore recommended that, TOCs should, in consultation with local authorities, be committed to develop a 'station access strategy' based on an initial assessment of all their stations.
- It is envisaged that this 'station access strategy' would provide the strategic overview of all stations, including identifying who is responsible for access issues at each one, and, more specifically, identifying where there are opportunities to make cost-effective improvements, which are likely to have sufficient passenger take-up to be useful. This is with the understanding that at some stations it would not be necessary, or cost-effective, to make significant additional investment.
- Within the strategy, a selected group of those stations best meeting the success criteria identified earlier would then be taken forward for full STPs. The selection of stations for STPs, the priorities for each and the appropriate level of resource committed by each party would be negotiated on an individual basis, taking account of the priorities and resources available to each.
- STPs can be regarded as a tool that can help the rail industry meet its strategic objectives for passenger growth, and, in doing so, will help to deliver modal shift and reduction in CO₂ emissions; however it is not necessarily appropriate to set such objectives at the level of the individual travel plan.
- STP timescales should be linked to the duration of the franchise, rather than expecting delivery over the much shorter timescales available to the pilots, making it more realistic for more ambitious schemes to be achieved.

It is recommended that the ATOC Station Travel Plan toolkit is updated in line with the recommendations of this report, so as to take account of the experience gained from the pilots. In addition to updating the advice on monitoring in the light of the experience of the pilots, it will provide an opportunity to include more material

11.5 The use of STPs as an indicator of delivering the 'end-to-end' journey

on qualitative issues such as stakeholder management, processes, objective setting and selection criteria.

The final objective of the evaluation project was to 'provide guidance to RSSB on whether and how to use Station Travel Plans as a partial measure for the industry's performance in providing an end-to-end journey.'

It is clear that the pilot STPs have been able to deliver a range of measures that support the end-to-end journey, and that the partnership they facilitate with local highway authorities can be particularly helpful in improving the provision of, and information about, access/egress modes. However, a full STP may not always be the most appropriate method for delivering improvements, and may not be needed at all where the end-to-end journey is already well provided for. Focusing solely on the STP as an indicator could therefore distort priorities. As has been discussed earlier, it is proposed that STPs can be regarded as one tool, amongst a suite of tools that can be applied in the delivery of a higher-level station access strategy. It is therefore recommended that performance in delivering end-to-end journeys is considered in relation to the development of overall station access strategies, with STPs being seen as one core component for delivering change through targeted improvements in favourable circumstances.

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