

Local Sustainable Transport Fund Case Study Evaluation

Strategic Employment Sites and Business Parks

West of England Summary Report

20 June 2017



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Executive Summary

Purpose and design of the Case Study

1. In 2013 the UK Department for Transport commissioned a number of 'Case Study evaluations' of the impacts of Local Sustainable Transport Fund (LSTF) investment. One of these was an evaluation of LSTF impacts on Strategic Employment Sites and Business Parks. The study was carried out between late 2013 and early 2016 by a research team led by Hertfordshire County Council and comprising: the University of Hertfordshire; the University of the West of England, Bristol (UWE); the West of England local authorities; and Atkins.
2. The aims of the evaluation were: to establish the impact of sustainable transport measures on commute mode use at selected strategic employment sites and business parks; to assess the impacts of these measures on the business performance of employers located at the sites; and to review the effectiveness of the LSTF delivery process.
3. The employment sites and business parks chosen for evaluation were: the North Fringe and Ports areas of Bristol, West of England; Maylands Business Park, Hemel Hempstead, Hertfordshire; Western Trading Estates, Slough, Berkshire; and Hatfield Business Park, Hatfield, Hertfordshire (comparator site, not in receipt of LSTF). This report presents the evaluation of LSTF impacts in the two sites located in the West of England: the North Fringe and Ports areas of Bristol.
4. Overall, the West of England local authorities (Bath and North East Somerset, Bristol City, North Somerset and South Gloucestershire Councils) were awarded nearly £34m from the LSTF between 2011/12 and 2015/16. Of this, expenditure on the LSTF business engagement programme during the 2-year evaluation period totalled over £2.2 million. Approximately 35% of this total was spent on business engagement in the two strategic employment sites selected for the case study (5% in the Bristol Ports area and 30% in the Bristol North Fringe).
5. In the West of England, a case study research approach was used to gather in-depth data from 25 employer organisations of different sizes and sectors, using a variety of research methods: employee travel surveys; in-depth semi-structured interviews with senior managers; and bus passenger surveys. All data collection was conducted in 2014 (Phase 1) and repeated in 2015/16 (Phase 2). In addition, a commuter panel survey ran between July 2014 and October 2015. Twenty of the 25 businesses and organisations took part in both research phases, whilst five were able to participate only once.

Key findings: Impacts of LSTF funding on commute mode share

6. There were statistically significant decreases in mode share for car alone (2.3% points) and car sharing (2.4% points) among North Fringe employees between March 2014 and March 2016. There were statistically significant increases in mode share for cycling (2.0% points), walking (1.1% points) and bus use (2.6% points). There were minimal changes in mode share among Ports area employees. After accounting for differences in sample characteristics in the two survey years, it was deduced that the probability of driving alone was 10% less likely in 2016 for North Fringe employees and the probability of using bus was 35% more likely (both statistically significant), but changes in

the probability of using other modes were not statistically significant.

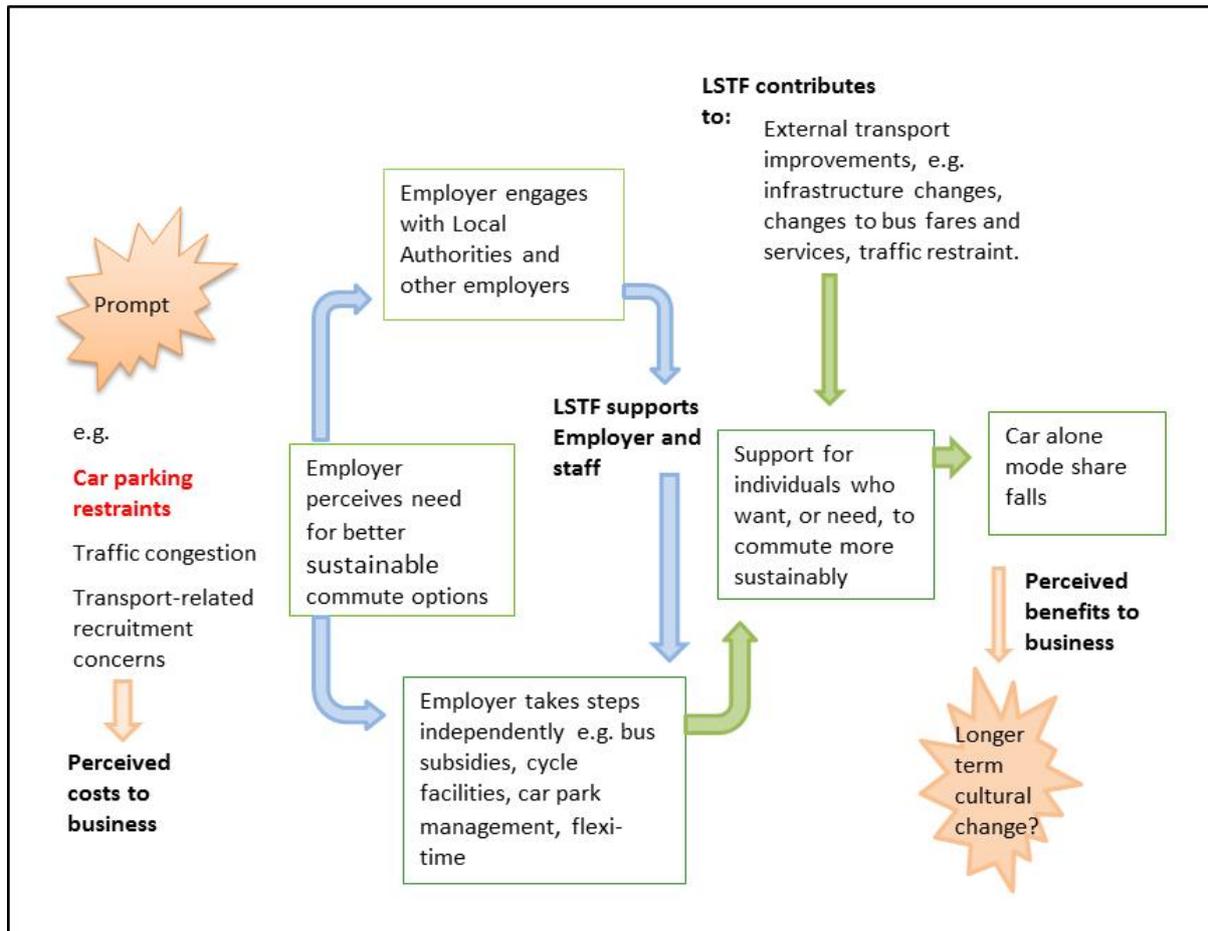
7. Looking at longer-term trends in mode share it was apparent that there was a more substantial reduction in car alone mode share of 4% points between March 2013 and March 2014 among North Fringe employees. This indicates that the WEST LSTF programme might have had a greater impact in its first year after which there was sustained impact at a lower level. It is also notable that reductions in single occupancy car use after 2013 in the North Fringe occurred against a backdrop of petrol price reductions, of a national trend of increasing car use and a regional trend of increasing car commuting.
8. To assess the role of the WEST programme in contributing to the mode share outcomes identified above, a number of matters should be considered. Firstly, a reduction in single occupancy car-use between March 2014 and March 2016 was statistically significant at only three out of 20 SES Case Study employers, all located in the North Fringe (single occupancy car-use increased among employers in the Ports area). Reductions in car parking availability had occurred at two of these employers (NHS Trust and University). Moreover, the NHS Trust was in some ways untypical because it had undergone a major site relocation in 2014 (after the March 2014 survey). Further analysis of the employee travel survey data showed that changes in mode share between March 2014 and March 2016 were explained well by changes in parking availability and not by the extent of exposure to LSTF measures (as measured at the employer level).
9. In exploring further whether there was evidence of a direct relationship between LSTF interventions and observed mode changes, the analysis of the employee travel survey data showed a decreased probability of car alone commuting, and increased probabilities of cycling and bus use, for individuals who used LSTF measures (but not if they were merely 'aware' of LSTF measures). This does not reveal direction of causality, although some insights into the self-reported influence of measures on individual behaviour were provided by the March 2016 employee survey. Of those respondents who reported using car alone less than two years ago, 29% said that the listed measures had made a little, or a lot, of difference to the way they travel to work. However, 64% said that the measures had made no difference. The closest associations were seen between using specific measures, e.g. on-site cycling facilities, and increasing use of the relevant mode (in this case, cycling), although the numbers involved were small.
10. This suggests that specific measures had a positive influence on reducing car use among a small proportion of individuals. However, LSTF measures might have helped to maintain existing levels of sustainable transport use in the face of a wider trend of increasing car mode share for commuter journeys in South-West England during the study period.
11. Qualitative evidence supports the view that LSTF measures had played a facilitating role in some individuals' decision to commute more often by sustainable modes, or to maintain existing use, although they were rarely reported to be the most important reasons. The narrative within many individuals' explanations of mode choice was of change or stability reflecting their own personal circumstances (e.g. moving house or job location, taking children to school, other responsibilities and interests outside work, or a desire to be more physically active).

12. Taken together, the results above suggest that reduction in parking availability was the chief factor in mode share changes seen between 2014 and 2016 with the LSTF programme playing an important role in facilitating mode changes of individual commuters. There is evidence of a greater reduction in single occupancy car use for employers in the North Fringe in the first part of the LSTF programme (up to March 2014) and it can be argued that the programme helped consolidate those gains in the second part of the programme (between April 2014 and March 2016).

Key findings: Impacts of LSTF funding on business performance

13. Senior managers perceived transport issues as important to their business performance in terms of both employee access (commuting) and operational transport (deliveries and logistics; business travel; client/visitor access). In particular, the quality of the commuter travel experience was seen as an important contributor to staff satisfaction, with improvements to the commute thought to bring about productivity gains by enhancing staff wellbeing.
14. Within this context, sustainable transport options were perceived as part of the 'mix' of transport investments required to ensure smooth business operations and support the recruitment, retention and productivity of appropriately skilled staff.
15. By 2016, most interviewees were either positive or neutral about the role the LSTF had played in increasing cycle-use by staff and improving bus services. Many interviewees in the North Fringe believed that business benefits (albeit indirect and unquantifiable) were starting to accrue from sustainable transport improvements. However, it was also felt that more time and greater investment in transport infrastructure and services was needed to make a substantial difference. In the Ports area, where implementation of LSTF measures stated later, some employers thought that a new bus service was starting to make a positive difference by widening access to jobs, but it was too soon to be able to detect direct impacts.
16. Employers adversely affected by congestion, limits on parking, recruitment difficulties etc. perceived a greater need for investment in sustainable transport. When faced with pressures such as these, they were more willing to engage with the local authorities and other businesses on sustainable transport, which in turn created a 'virtuous circle' whereby they also accrued greater benefit from the LSTF (see Figure ES-1 below).

Figure ES-1: The role of LSTF interventions in the process of commute mode change



Key Findings: Delivery and process

17. The business networks, North Bristol SusCom and SevernNet, played an important part in developing and maintaining contacts with employers through which LSTF measures could be delivered by the Local Authority Business Engagement officers. Joint action through the networks gave employers an opportunity to help shape local transport policies and measures. Because the networks represented the employers’ own interests, they were perceived by the local authorities as offering ‘credibility gains’ to the work undertaken by LSTF officers. The networks also provided important continuity in the face of staff turnover within the local authorities during the LSTF evaluation period and beyond.

Conclusions

18. The results showed that ‘pull factors’ were unlikely to bring about significant changes in commuter travel behaviour without measures which also ‘pushed’ employees into reducing their car-use. In the case of the North Fringe, which saw a statistically significant fall in car-alone mode share, the need to enforce parking restraints was a key issue for many employers. Statistical analysis showed that reduction in car parking availability was the primary factor leading to reduced car alone commuting.

19. Nonetheless, there was evidence from both surveys and interviews that LSTF measures assisted individuals in using alternatives to the car once they had been prompted to do so by ‘push factors’ such as those listed above. LSTF measures to support cycling stood out in the North Fringe as

attracting high levels of awareness among both senior managers and employees, and relatively high levels of use among employees.

20. The importance of 'push factors' such as limits on parking also applied to employers' engagement with sustainable transport issues, which tended to be prompted by a specific transport 'problem'. Those employers adversely affected by limited parking, local traffic congestion, and/or transport-related recruitment difficulties, perceived a need for greater investment in sustainable transport, and were more likely to have engaged with the LSTF than those less affected.
21. Employers who had engaged actively with the LSTF saw publically funded investment as part of a collaboration in which they also bore a responsibility. These employers regarded LSTF as useful 'leverage' for sustainable transport measures they wished to undertake themselves. LSTF grants could, for example, also lend weight to arguments within an organisation for investment in sustainable transport measures at a time when employers faced competing financial pressures.
22. Longer term acceptance and use of sustainable travel modes among commuters can be informed by levels of satisfaction with the commute. A comparison of employees' levels of satisfaction with their normal mode of travel to work in 2014 and 2016 showed a marked increase in bus users' trip satisfaction by 2016, which suggests that the higher bus mode share demonstrated in 2016 may be maintained. The finding that those who walked or cycled remained the groups most satisfied with their commutes can be considered as a positive outcome of interventions to support these modes.

1 Introduction

In 2013 the UK Department for Transport commissioned a number of 'Case Study evaluations' of the impacts of Local Sustainable Transport Fund (LSTF) investment. One of these was an evaluation of LSTF impacts on Strategic Employment Sites and Business Parks (referred to subsequently as SES Case Study) between late 2013 and early 2016. The purpose of this evaluation was to fill an evidence-gap on the impact of sustainable transport measures on travel behaviour and business activity in large, out-of-town employment areas which have typically relied on access by car. Hertfordshire County Council led a research team from: the University of Hertfordshire; the University of the West of England, Bristol (UWE); the West of England local authorities; and Atkins, to evaluate the impact of travel behavioural change measures delivered through the LSTF programme at five strategic employment site and business park locations in England which had varying characteristics with regard to business sector composition, transport connectivity and proximity to population. The intervention sites were located in Hertfordshire, Slough and the West of England. The findings from the full SES Case Study are provided in a Summary Report¹.

This report summarises the evaluation of LSTF impacts in the two sites located in the West of England: the North Fringe and Ports area of Bristol. The research was led by the Centre for Transport & Society at the University of the West of England, in partnership with Bristol City Council, South Gloucestershire Council, and two local business networks: North Bristol SusCom and SevernNet. Full details of the research methods and findings for the evaluation of the two sites in the West of England are provided in the Final Report².

2 The SES Case Study sites in the West of England

2.1 The West of England LSTF programme

The Local Sustainable Transport Fund was launched in January 2011 with the four West of England local authorities (Bath and North East Somerset, Bristol City, North Somerset and South Gloucestershire Councils) being awarded nearly £30 million by the Department for Transport from the fund for two separate but integrated project programmes: the 'Key Commuter Routes' programme, implemented in 2011/12 and 2012/13; and the West of England Sustainable Travel (WEST) 'Large Project' programme, implemented from 2012/13 to 2014/15. Subsequent funding of £4 million was awarded for an extension year, concluding in March 2016.

The WEST programme involved an integrated package of measures covering the entire West of England travel to work area, aiming to work with employers, school, colleges and universities to encourage people to use sustainable forms of travel. An annual reduction in car trips of 0.85% was predicted from the WEST programme across the Greater Bristol area with this associated with a reduction in vehicle kilometres of 2% and travel time of 3% in peak periods.

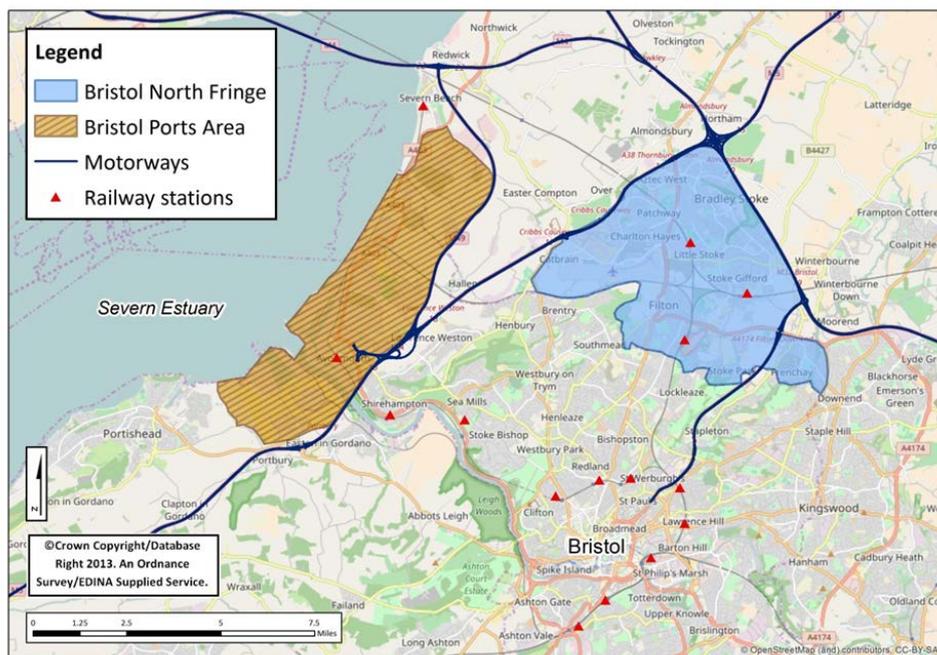
¹ Chatterjee, K., Bartle, C., Smyth, A. and Kelleher, L. (2017). Local Sustainable Transport Fund Case Study Evaluation: Strategic Employment Sites and Business Parks. Summary Report.

² Bartle, C. and Chatterjee, K. (2017). Local Sustainable Transport Fund Case Study Evaluation: Strategic Employment Sites and Business Parks. West of England Final Report.

The 'Business' tranche of the WEST programme delivered interventions and engaged with employers and employees across the four local authorities between March 2012 and March 2016. The collection of new data for the specific purpose of the SES Case Study commenced in 2014, hence the evaluation primarily covers the period March 2014 to March 2016.

The WEST programme included the objective of developing Area Travel Plans in three locations in the West of England. Two of these were selected for detailed evaluation as part of the SES Case Study: the *North Fringe Area Travel Plan* area and the *Portside Area Travel Plan* area, located to the North and West of Bristol respectively (see Figure 2-1).

Figure 2-1: Location of Bristol North Fringe and Ports strategic employment areas



2.2 The North Fringe and Ports areas

Over 80,000 people work in the Bristol North Fringe, with additional transport demand created by 30,000 students. It has a preponderance of large companies in the engineering, aerospace, ICT and financial services sector, as well as a science park and business park housing smaller hi-tech companies, a university, a large hospital and a large government agency. Around 30,000 people are employed in the Bristol Ports area. It is characterised by storage and distribution centres for retail operations, chemical and other manufacturers, and hundreds of businesses of various sizes, many connected with shipping, logistics, energy and waste.

The North Fringe is located 5-7 miles to the north of the centre of Bristol and is subject to greater road congestion and pressure on parking than the Ports area. The Ports area stretches five miles alongside the Severn Estuary, south of the Second Severn Crossing. The area between central/west Bristol and the Ports is semi-rural. Both areas are well connected to the M4 and M5 motorways, but the North Fringe is better served than the Ports area by public transport, cycling and walking routes.

The two areas therefore present very different transport challenges, which makes comparisons between the two illuminating.

The SES Case Study research was undertaken with assistance from two local business networks: North Bristol SusCom (North Fringe) and SevernNet (the Ports area). SusCom³ is a group of employers located in North Bristol which promotes sustainable commuting for employees and students in the area. Its members range from SMEs to some of Bristol's largest international companies. It aims to influence and improve local transport provision to combat traffic congestion and reduce impact on the environment. SevernNet⁴ is a not-for-profit enterprise, run by, and working for the benefit of, the businesses, organisations and the local community in Portbury, Avonmouth and Severnside. One of its key aims is to improve transport facilities across the area.

2.3 LSTF measures in the North Fringe and Ports areas

Expenditure on the business engagement programme between 2014/15 and 2015/16 totalled over £2.2 million across the four local authorities taking part in the WEST LSTF programme with approximately 35% of this total spent on business engagement in the two strategic employment sites selected for the SES Case Study (30% in the Bristol North Fringe and 5% in the Bristol Ports area). Services offered to employers through the business engagement programme included:

- Employer grants (50% funding for, e.g. on-site cycle facilities)
- TravelWest 'Roadshows' (travel advisors visiting employer sites to offer information and advice to employees)
- 'Dr Bike' (cycle mechanics visiting employer sites to carry out free repairs)
- Cycle repair kits for use by employees
- Cycle loans for employees
- Electric pool vehicles
- Electric vehicle recharging points on employer sites
- Sustainable travel awards for employers
- Lift-share partnering services

As well as LSTF-funded business engagement, employers in the two areas benefitted to varying degrees from improvements to cycling and walking infrastructure and bus services in the surrounding areas, as well as improvements to travel information and awareness-raising activities – funded through other parts of the LSTF programme. These included:

- Structural improvements to cycle paths and footpaths
- A cycle hire service at Parkway Rail station

³ <http://www.northbristolsuscom.org/index.php>

⁴ <http://severnnet.org/>

- Cycle parking at Avonmouth Rail station
- Bus service improvements (e.g. Kings Ferry Commuter Coach; X13(X74), X18, X19, extension of service 41(3) into the Avonmouth employment area)
- Bus infrastructure improvements (bus stops, real time information)
- TravelWest website and bus checker app, with coverage across the WEST LSTF area

2.4 Non-LSTF measures and other contextual factors in the North Fringe and Ports area

A number of improvements to bus services in the two areas occurred over the period, funded by sources other than the LSTF, namely: a new shuttle bus service linking local villages and rail stations with employers in Avonmouth (the SevernNet Flyer), and a business shuttle service linking together various North Fringe employers and Parkway rail station (the Kings Ferry Business Shuttle). Some employers in the North Fringe were already providing a bespoke commuter bus service for their staff, and one Avonmouth business introduced its own staff bus service in 2015. Other employers, such as the NHS Trust and the University, were providing subsidies to bus companies to encourage the establishment of commercial services to their sites. The NHS Trust also provided a Park and Ride service for staff following a major site relocation in 2014. Finally, in Avonmouth, Section 106 funding was used to fund cycle parking at some employer sites.

In addition, a number of contextual factors contributed to the transport environment in the North Fringe and Ports areas between 2014 and 2016, which are likely to have influenced the outcomes of LSTF interventions. The Ports area saw: prolonged periods of traffic congestion caused by major roadworks on its north-south arterial road (A403); growing traffic congestion on the M5 motorway, causing long tailbacks into Avonmouth; and continued problems with HGV parking around the area, despite increased parking restraints.

Various parts of the North Fringe experienced: peak time traffic congestion from roadworks and bridge work associated with rail electrification; road junction improvement and works underway as part of the development of a new bus rapid transit system (Metrobus); increases in traffic density associated with the construction of new housing adjacent to some employers.

2.5 Background trends

It is important to consider background trends when assessing changes to travel behaviour in the case study areas during the period of the study and interpreting the impact of the LSTF programme.

Road traffic statistics from the Department for Transport (published May 2016)⁵ show that annual car vehicle traffic in South Gloucestershire rose from 2,955,000 km in 2013 to 3,133,000 in 2015 (a 6% increase between 2013 and 2015). Increases in Bristol over this period were 2% and in the south west of England (and England overall) were 3%. This period also saw reductions in petrol prices. The

⁵ DfT (2016). Road Traffic Statistics. Available from www.gov.uk/government/organisations/department-for-transport/series/road-traffic-statistics (last accessed 14 November 2016).

average annual retail price of premium unleaded petrol dropped from 134.2p per litre in 2013 to 127.5p per litre in 2014 and 111.1p per litre in 2015 (a 17% decrease between 2013 and 2015)⁶.

According to the Labour Force Survey, the trend between 2013 and 2015 for car total mode share for commuting in England was a reduction of 0.4%⁷. This suggests there was negligible change in car driver mode share or car total mode share across England during the period of interest. However, the trend for the South West region (in which the Bristol employment areas are located) was an increase in car total mode share for commuting of 1.4%. This indicates that the WEST LSTF interventions were introduced in the context of a small modal shift in commuting towards car travel.

3 Evaluation approach

3.1 Research Aims

The SES Case Study had the following research aims:

Research Aim 1 – Modal Shift

To establish the impact of a package of sustainable transport measures on modal shift in strategic employment sites and understand which interventions are most effective in different contexts.

Research Aim 2 – Economic Impacts

To assess the impacts on business performance, including access for existing and potential employees, of implementing sustainable transport measures in strategic employment sites.

Research Aim 3 – Delivery and Process

To review the effectiveness of the process of delivering sustainable transport measures in strategic employment sites

3.2 Research and evaluation approach

The evaluation approach chosen for the SES Case Study was an extended intervention logic approach, which combines elements of theory-based approaches with a study of outcomes relating to modal shift and business performance. An outcomes study compares the situation prior to the intervention with the situation after the intervention, whilst a theory of change approach is used to answer questions about why these changes occurred. Methodologically, the evaluation was treated as a case study; the case study research approach is “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using

⁶ National Statistics (2016). Quarterly Energy Prices: September 2016. Available from <https://www.gov.uk/government/statistics/quarterly-energy-prices-september-2016> (last accessed 14 November 2016).

⁷ DfT (2016). Transport Statistics Great Britain. TSGB0109. Available from <https://www.gov.uk/government/statistical-data-sets/tsgb01-modal-comparisons#table-tsgb0109> (last accessed 14 November 2016). Figures derived from Labour Force Survey ‘usual method of travel to work’ collected annually in October-December. Separate figures not available for car alone and car share.

multiple sources of evidence” (Robson, 2000, p178)⁸. This has implications for how the evaluation findings might be generalised beyond the areas studied. A case study aims not for statistical generalisation, but for theoretical generalisation, where a particular set of results are generalised to broader theory. Methodologically, theoretical generalisation is possible if the cases act as exemplars with which to compare other similar cases as they arise.

4 Research methods

Both qualitative and quantitative research methods were used to obtain data from 25 employer organisations across the North Fringe and Ports areas in order to evaluate the impact of LSTF measures on commuting behaviour and business performance between 2014 and 2016. Twenty of the employers took part in both the baseline and follow-up research, whilst five were able to contribute at only one of the time points.

4.1 Participating employers

The West of England research partners set out to recruit a minimum of 20 employers in the North Fringe and Ports areas to participate in the SES Case Study. Each employer was requested to take part in all the data collection activities in both 2014 and 2016. Employers were selected according to a number of criteria: size, industry sector, level of engagement with LSTF, and location within the North Fringe or Ports area. Details of the recruited employers are provided in Table 4-1 and Table 4-2. In the North Fringe area, 15 employers were recruited in 2013. By 2015, one of the companies was no longer in business, and another had suffered heavy redundancies so was not re-engaged. One replacement business was invited into the study in order to maintain a range of employer types. In the Ports area, nine businesses were recruited in 2013. In 2015, seven of the businesses were successfully re-engaged. Overall, 21 West of England employers took part in the follow-up in 2016, compared with 24 in 2014.

⁸ Robson, C. (2002). *Real World Research: A Resource for Social Scientists and Practitioner-Researchers*. Second Edition. Oxford: Blackwell.

Table 4-1: Recruited employers in North Fringe

Employer (pseudonym)	Sector	Number of employees 2014	Participated in 2014	Participated in 2016
Aerospace Manufacturer 1	Manufacturing	4,000	✓	✓
Business Park	MoD/Emergencies/ Government	177	✓	✓
Engineering Consultancy 1	Construction/Engineering	1,050	✓	✓
Engineering Consultancy 2	MoD/Emergencies/ Government	400	✓	✓
Science Park	Range of high-tech sectors	200	✓	✓
Technology Consultancy	Business Services	200	✓	✓
Financial Services Company	Accountancy/Financial	3,000	✓	✓
Technology Company 1	IT/Communications/Electronic Components	800	✓	✓
Construction Services Company	Construction/Engineering/ Materials	300	✓	✓
Retail Company	Retail	1000	✓	✓
Energy Technology Company	Energy/Utilities	70	✓	X
Large Public Sector Employer	MoD/Emergencies/ Government	10,000	✓	✓
NHS Trust	Healthcare/NHS	9,500	✓	✓
Technology Company 2	IT/Communications/Electronic Components	205	✓	X
Environmental Compliance Co.	Environmental	Did not participate	X	✓
University	Education	2,800	✓	✓

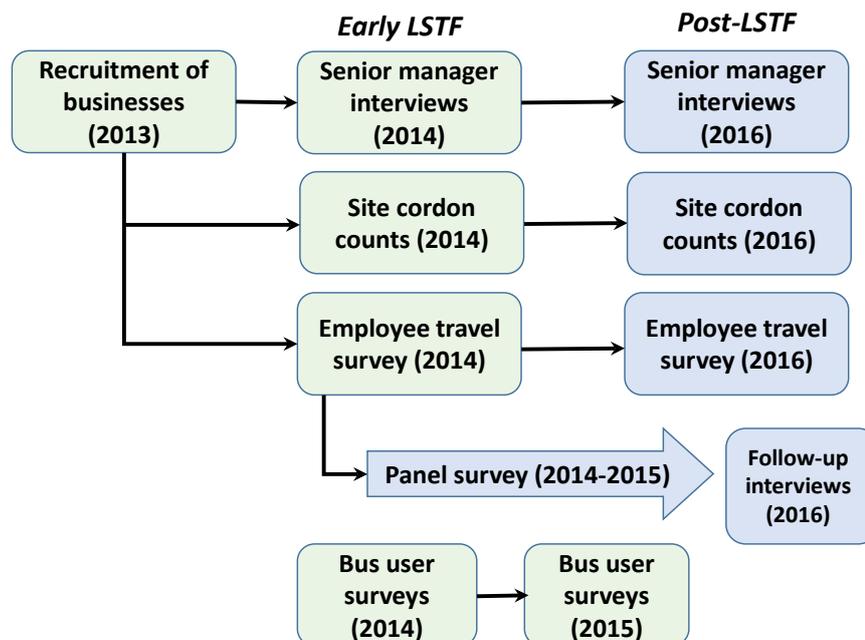
Table 4-2: Recruited employers in Ports area

Employer (pseudonym)	Sector	Number of employees 2014	Participated in 2014	Participated in 2016
Skincare Products Company	Distribution/Logistics	73	✓	✓
Waste recycling Company 2	Materials/Energy/Utilities	78	✓	✓
Aerospace Manufacturer 2	Manufacturing	370	✓	✓
Catering Products Company	Distribution/Logistics	800	✓	✓
Mail Distribution Company	Distribution/Logistics	200	✓	X
Power Station	Energy/Utilities	55	✓	✓
Waste Recycling Company 1	Materials/Energy/Utilities	65	✓	✓
Bioscience Manufacturer	Manufacturing	55	✓	✓
Candle Products Company	Distribution/Logistics	180	✓	X

4.2 Data collection methods

The different research methods used and the relationship between them are shown in Figure 4-1.

Figure 4-1: Overview of data collection methods



4.2.1 Senior manager interviews

For the baseline interviews in 2014 an interview was sought with a member of the senior management team in each participating employer – preferably an individual whose remit included site and transport issues, but who was not engaged in detailed transport issues on a daily basis. The aim was to obtain a senior level, ‘corporate’ perspective on the impact of transport on business performance, within the context of wider issues affecting overall operational performance. The process of identifying and approaching a senior manager was initiated by the SusCom, SevernNet or Local Authority contact in each employer organisation, and followed up by the UWE researcher who conducted the interview. For the follow-up interviews (2016), the same interviewee was recruited in each employer if he or she was still in the same post, in order to ensure as much continuity as possible. Where the 2014 interviewee had retired or changed jobs, an interview was arranged with the senior manager now carrying out an equivalent role. Thus, the 2016 interviews at eleven of the 2016 employers were with the same person or people as in 2014; at nine employers the interview was with a manager in the same or similar role; and one employer was new to the study. A total of 45 interviews were conducted across the two years.

The 2014 interview content was designed to explore senior managers’ perceptions of the relevance of sustainable transport to the performance of their business, its economic impacts, and the specific

role of LSTF funding and measures. The follow-up interviews comprised the same areas of questioning as 2014, but interviewees were also invited to reflect on any changes which might have occurred over the two years, and were probed more deeply on their knowledge of, and views of LSTF funding and measures. The interviews were semi-structured, each taking between 40 minutes and 1 hour.

4.2.2 Employee travel surveys

The employee travel surveys for the SES Case Study businesses in the West of England were carried out as part of the annual South Gloucestershire travel-to-work survey which takes place in March each year. The survey was extended in 2016 to employers across the other three local authority areas in the West of England (Bristol; Bath and North East Somerset; and North Somerset). All the employers taking part in the SES Case Study participated in the employee travel surveys in 2014 and 2016.

The core questions in the survey were identical in both years. These included the main transport mode used to travel to work both on the day of the survey and 'normally'; the distance travelled to work and usual trip duration; access to car and bicycle; holding of a driving licence; basic socio-demographic information and job type. A number of additional questions were asked in 2016 to gather data on the direct influence of LSTF measures on individuals, i.e. awareness and use of specific LSTF measures, whether their use of different modes had changed compared with two years ago, and whether LSTF measures had influenced the way they travelled to work.

In 2014 there were 9,684 responses from employees in 24 SES Case Study organisations, representing 27% of total staff in these organisations. In 2016, there were 5,728 responses from 21 SES Case Study employers, representing 17% of total staff. In both years 3.8% of total responses were via paper questionnaires and the rest online.

4.2.3 Site cordon counts

Peak arrival time cordon counts of staff arriving by each mode were carried out by the partner local authorities at 18 employer sites, covering 19 of the 24 SES Case Study employers, between 12 March and 2 April 2014. The remaining five employers did not receive a cordon count due to the unfeasibility of doing so at their sites (e.g. large, complex sites with multiple entrances where it was not possible to differentiate employees from students, visitors, and those passing through). The follow-up counts were conducted between 8 and 17 March 2016. Peak-time arrivals by mode were counted at 18 of the 21 employers participating in the SES Case Study in 2016.

4.2.4 Bus user surveys

On-board bus user surveys were conducted in March 2014 and 2015 on LSTF-funded bus and coach services serving the North Fringe. The surveys aimed to find out levels of customer satisfaction with the services, and whether they had attracted car commuters. The two services which were evaluated in this way as part of the SES Case Study were: the X18 commuter bus service, and the Kings Ferry Commuter Coach service. For the SES Case Study, the analysis considered the responses

of only those passengers travelling in the morning peak for the purposes of employment on inbound trips to the North Fringe, producing a sample size of 76 in 2014 and 102 in 2015.

4.2.5 The panel survey and follow-up interviews

The *North Bristol Commuter Panel* was set up by UWE researchers to collect longitudinal data, tracking the perceptions and behaviour of approximately 1,900 commuters every three months over a period of 18 months between March 2014 and October 2015. The main aim of the panel study was to gain understanding of changes made by individuals to their commuting mode choice behaviour which would help to explain the aggregate outcomes measured by the 2014 and 2016 employee surveys.

The same questionnaire was used at each wave, comprising questions on:

- Main commute mode normally used
- Reasons for any change in normal mode since the last survey
- Perceptions of normal mode
- One-week travel diary (with main commute mode used on each day)
- Change of job or home location
- Awareness of LSTF initiatives
- Influence of LSTF initiatives on attitudes or behaviour

The initial sampling frame for the panel was the employees from cases study businesses who responded to the March 2014 employee survey, and had said they were willing to be contacted about further research. The timing of the panel waves and response numbers at each wave are shown in Table 4-3. 658 participants completed all six waves of the survey.

Table 4-3: Panel survey response rates at each wave

	Date	Invited	Responded	
		N	N	%
Wave 1	July 2014	3233	1526	47
Wave 2	October 2014	3104	1539	50
Wave 3	January 2015	1947	1494	77
Wave 4	April 2015	1917	1383	72
Wave 5	July 2015	1909	1255	66
Wave 6	October 2015	1902	1237	65

Following the final wave of the survey (wave 6), semi-structured interviews were carried out over the telephone with 10 respondents to explore in more depth the influence of LSTF measures on commuting behaviour.

5 Findings: Modal shift

The research relating to modal shift was designed to answer the following research questions:

- *RQ 1a: What changes in modal share are found to occur in the strategic employment sites and how does this vary depending on the amount of exposure to LSTF interventions?*
- *RQ 1b: What LSTF interventions have the greatest impacts on car driver mode share and how is this affected by context (e.g. characteristics of location, employer, and employees)?*
- *RQ 1c: What changes in perceptions and attitudes towards low carbon travel alternatives are found to occur for employees working for businesses in strategic employment sites and how is this affected by exposure to LSTF interventions?*

The principle sources of data were the 2014 and 2016 employee travel surveys. These were supplemented where appropriate by analysis of data from the site cordon counts, bus user surveys and panel survey and follow-up interviews.

5.1 Characteristics of the employee travel survey samples

The employee travel survey samples in each year were generally similar with respect to demographic and employment characteristics, with some exceptions. Women were more strongly represented in the 2016 survey than in 2014 (48.1% compared to 43.8%). The proportion of skilled manual employees was slightly higher in 2016 and the proportion of middle managers slightly lower.

Among the employee travel survey sample in 2016, the proportion of respondents working in the North Fringe and commuting up to 5 miles had increased by 3.4 percentage points compared with 2014, whilst the share of those travelling between 25 and 50 miles had fallen by 2.8 percentage points. The mean distance to work in the North Fringe fell from 14.5 to 12.5 miles. In the Ports area, the greatest change in the sample was the proportion commuting between 10 and 25 miles, which was 2.9 percentage points lower in 2016, compensated for by a slight increase in the share of those travelling up to 5 miles.

5.2 Changes in mode share

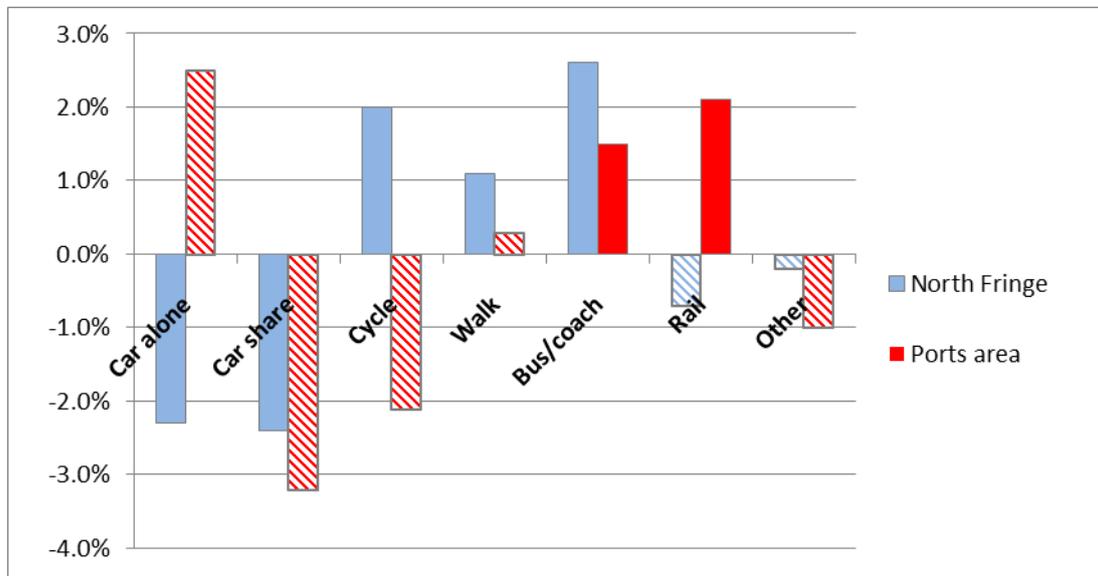
The first modal shift research question was: *What changes in modal share are found to occur in the strategic employment sites and how does this vary depending on the amount of exposure to LSTF interventions?* Findings for the first part of this question are reported below from responses to the employee travel surveys and *North Bristol Commuter Panel*.

5.2.1 Travel to work today

Figure 5-1 shows changes in mode share between March 2014 and March 2016 derived from responses to the employee travel survey question 'How did you travel to work today?'. There were

statistically significant decreases in mode share for car alone (2.3% points) and car sharing (2.4% points) among North Fringe employees between 2014 and 2016. There were statistically significant increases in mode share for cycling (2.0% points), walking (1.1% points) and bus use (2.6% points). There were minimal changes in mode share among Ports area employees.

Figure 5-1: Mode share % point changes for North Fringe and Ports area



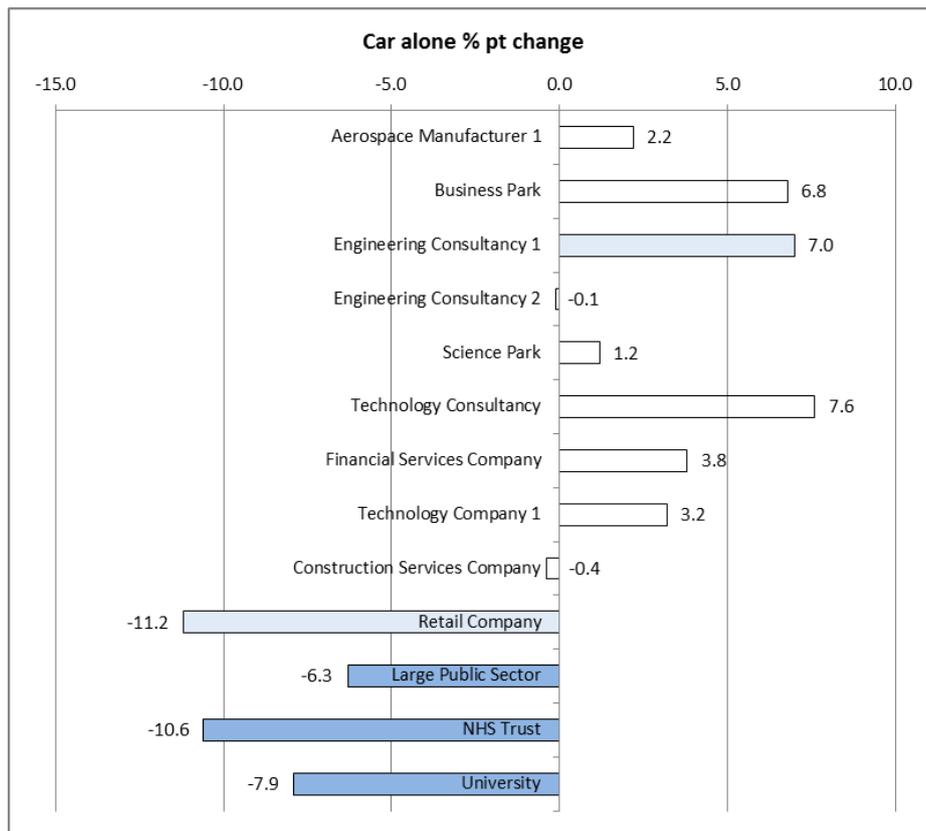
Note: Statistical significance at 95% level shown in solid colour.

The changes in mode share in the two employment areas between 2014 and 2016 can be contrasted with national and regional trends. As noted in section 2.5, the trend between 2013 and 2015 for car mode share (car as driver or passenger) for commuting in England was a reduction of 0.4% points according to the Labour Force Survey. The trend for the South West region (in which the Bristol employment areas are located) was an increase in car total mode share for commuting of 1.4% points. The 4.8% point decrease in total car mode share in the Bristol North Fringe area is even more notable given the South West regional trend of an increase of 1.4% points.

A breakdown of mode share changes at the level of individual employers reveals variation within the samples.

Figure 5-2 shows that statistically significant reductions in car alone mode share at a 99% confidence level occurred at three of the 13 case study employers in the North Fringe that participated in the employee surveys in both years. These employers were among the largest employers, in terms of number of employees, and had limited parking availability (less than one space per two employees) in 2014 with two of them experiencing reductions in parking availability between 2014 and 2016 (the University and NHS Trust). All of them had ‘intensively’ engaged with the WEST LSTF programme. They each saw increases in mode share of walking and bus use with two of them seeing increases in cycling (the exception was the Large Public Sector Employer). These were the modes prioritised in the WEST LSTF programme. No changes in car alone mode share were statistically significant for the Ports area employers.

Figure 5-2: Car alone mode share percentage point changes for North Fringe employers

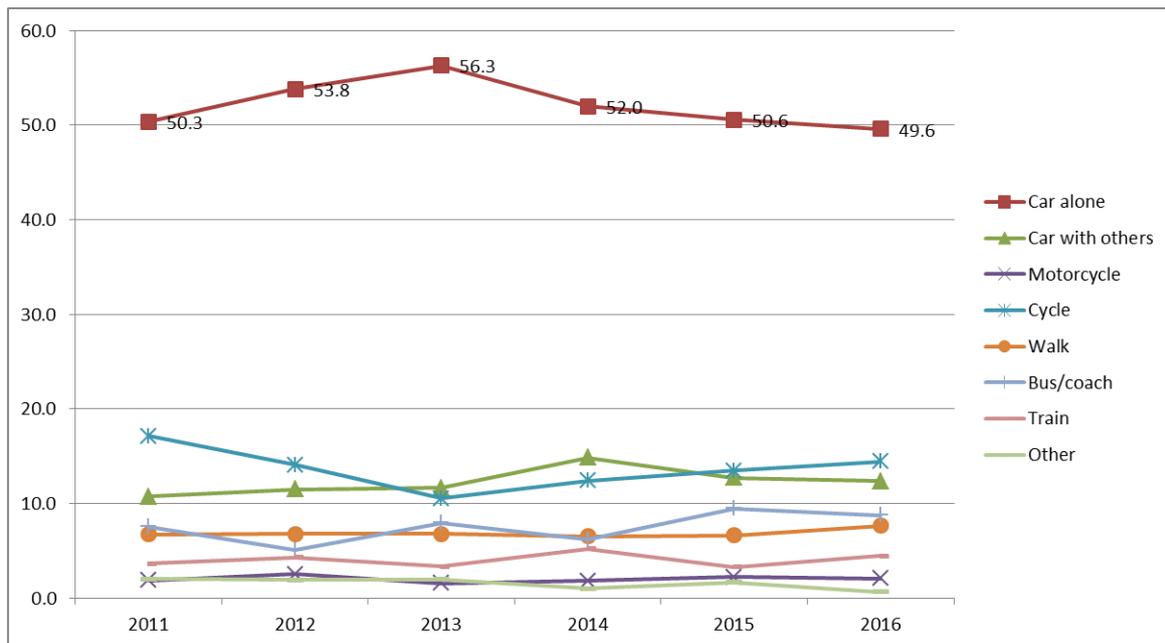


Note: Statistical significance at 99% level shown in dark blue and at 90% level shown in light blue.

Car with passenger mode share only increased at four of the 13 employers in the North Fringe and one employer in the Ports area. Cycling mode share increased at 11 of the 13 employers in the North Fringe and one employer in the Ports area. Walking mode share increased at 9 of the 13 employers in the North Fringe with negligible numbers of employees walking to work in the Ports area. Bus/coach mode share increased at 6 of the 13 employers in the North Fringe with negligible numbers of employees using bus/coach in the Ports area. These results provide an indication of success in promoting cycling to work in the North Fringe and an indication that car sharing became less popular across both areas between 2014 and 2016.

Employee survey results were also available for other years than 2014 and 2016 for some employers, particularly those in the North Fringe (see Figure 5-3). The trend for car alone mode share in the North Fringe was an increase between 2011 and 2013 followed by a large reduction from 2013 to 2014 from 56.3% to 52.0%, a reduction from 2014 to 2015 from 52.0% to 50.6% and reduction from 2015 to 2016 of 50.6% to 49.6%. This implies that the WEST LSTF programme may have had largest impact in the first part of the funding period, followed by sustained impact at a lower level subsequently.

Figure 5-3: Aggregate mode share for North Fringe from employee travel surveys 2011-2016



The site cordon counts offered a further source of evidence on mode share changes. However, the differences between 2014 and 2016 in shares for particular modes obtained from the employee travel survey and site cordon count were not always similar in direction for individual employers. Perhaps of more concern than inconsistencies in the trends observed was that the magnitude of car alone mode share changes calculated from the cordon surveys was much larger. It is our belief that efforts made to improve the accuracy of the cordon counts in 2016, learning from issues arising in 2014, have led unwittingly to systematic differences in results. We are confident that the methodology used in the employee travel surveys was consistent between 2014 and 2016 and we therefore consider that the results from the employee travel surveys are of greater validity.

5.2.2 Travel to work normally

Responses to the employee travel survey question ‘how do you normally travel to work?’ in 2014 and 2016 showed that percentage point changes in ‘normal’ mode share were similar overall to the changes in ‘travel today’ mode share. The mode share changes for North Fringe were slightly greater with a reduction in car alone commuting of 3.4% points based on ‘travel to work normally’ question compared to a reduction of 2.3% points based on ‘travel to work today’ question. An increase in cycling mode share of 2.7% points was obtained based on travel to work normally’ question compared to 2.0% points based on ‘travel to work today’ question.

5.2.3 Changes in frequency of mode use

Another indication of change in mode share is available from a question in the 2016 employee travel survey which directly asked respondents whether, compared with two years ago, they were using specific transport modes more, the same, less, or had not used them. In the North Fringe a notably higher number (of those who had been working for their employer at least two years) reported cycling more than cycling less (397 compared to 306) and walking more than walking less (402

compared to 235). There was little difference between those driving more and driving less (711 compared to 684), and those using public bus more and less (286 compared to 284). This provides evidence to support modal shift having occurred to cycling and walking. For the Ports area the numbers reporting change in the amount they cycled, walked and used public bus was low, but more reported driving alone more than less (87 compared to 32). This is consistent with the result shown in Figure 5-1 that car alone mode share increased in the Ports area.

5.2.4 Mode use from the panel survey

An alternative indication of changes in mode share over time was revealed by the *North Bristol Commuter Panel*, which ran between the two employee travel surveys. The panel comprised a subset of respondents to the 2014 employee travel survey, who were invited to answer the same set of questions once every three months from July 2014 to October 2015. This allowed the commuting behaviour of a specific sample to be tracked over six waves. Most of the panel survey members worked in the North Fringe with only 5% of wave 1 respondents working in the Ports area. One question asked at each wave was 'What form of transport do you normally use to travel to work?'. The result from this question showed consistency in mode shares over time, but with a slight reduction in car alone use in the spring and summer, and a slight reduction in cycling in the winter.

5.3 Changes in mode share and exposure to LSTF interventions

It was investigated how changes in commute mode share were related to exposure to LSTF interventions. This was carried out using data from the employee travel surveys and the *North Bristol Commuter Panel*.

5.3.1 Multiple regression analysis of employee travel survey data

Multiple regression analysis was carried out to seek explanation of the commuting mode choices reported for travel to work today in 2014 and 2016 by employee travel survey respondents. The results referred to in this section are for North Fringe employees since it has been shown there was a modal shift in North Fringe but not Ports area.

The first step was to assess if there were differences in probability of using a commute mode in 2016 after accounting for differences in sample characteristics in 2014 and 2016. This confirmed statistically significant decreases in probability of driving alone (10% less likely) and increases in probability of using bus (35% more likely) in 2016 compared to 2014, but changes in probability of car sharing, cycling or walking were no longer statistically significant at 95% confidence level (see Table 5-1).

The second step was to assess if differences in probability of using a commute mode in 2016 were related to level of exposure to LSTF measures at the employer level and/or to changes in parking availability at the employer level. It was found that parking availability provided a strong explanation of changes in mode choice probabilities between 2014 and 2016 and after accounting for this there were no statistically significant changes in probability of using any of the modes in 2016 (see Table

5-1). The extent of exposure to LSTF measures measured at the employer level⁹ was not statistically significant after considering parking availability. These results suggest that changes in parking availability were the primary factor influencing modal shift between 2014 and 2016.

The third step was to assess if differences in probability of using a commute mode in 2016 were related to awareness and engagement with LSTF measures at the level of the individual commuter (which was asked in 2016 employee travel survey). There were no statistically significant differences in mode choice probabilities in 2016 for individuals with greater awareness of LSTF measures, but there was decreased probability of car alone commuting and increased probabilities of cycling and bus use for individuals who had engaged with a greater number of LSTF measures. For example, those individuals who engaged with 1-3 LSTF measures (33% of all 2016 respondents) had 0.44 times the odds of driving alone in 2016 of those individuals who engaged with no LSTF measures (62% of 2016 respondents).

The results from the multiple regression analysis suggest that parking availability was the primary factor for reduced car alone commuting in the North Fringe but also that engagement with LSTF measures increased the likelihood of individuals using alternatives to car commuting. From this it cannot be concluded that the LSTF measures prompted a modal shift – a more plausible interpretation is that restraint on parking or other ‘push’ factors prompted commuters to use alternatives to car commuting and LSTF measures assisted them in doing this.

Table 5-1: Summary of odds ratios for changes in probability of mode choice in 2016 for North Fringe only

	Mode share changes 2014 to 2016	Odds ratio for changes in probability of mode choice in 2016 compared to 2014		
		Basic changes in probability	Accounting for sample characteristics	Accounting for sample characteristics & parking availability
Car alone	-2.3%**	0.91**	0.90**	0.93
Car share	-2.4%***	0.81***	0.94	0.93
Cycle	+2.0%***	1.19**	1.08	1.08
Walk	+1.1%*	1.18*	1.12	1.07
Bus/coach	+2.6%***	1.61***	1.35***	1.15

Statistical significance: *** p<=0.01 ** p<=0.05 * p<=0.1. Sample size = 14169 (employees in North Fringe only)

⁹ Classified as low, medium or high based on how many of following took place: received employer grant, invited sustainable transport roadshow visits (information stands staffed by LSTF travel advisers, offering travel planning and follow-up services) and made improvements to cycle facilities.

5.3.2 Changes in frequency of mode use and awareness and use of LSTF measures

An assessment was made whether there was any relationship between self-reported changes in use of different modes and the number of LSTF measures reported to have been used (from respondents to the 2016 employee travel survey). Associations were highly statistically significant (at 99.9% confidence level) between self-reported changes in changes in driving alone, cycling, walking and public bus and the number of LSTF measures used. For example, 63% of respondents reported not using any LSTF measures, but this proportion was lower among the section of the sample who said they were driving alone less than they were two years ago. Only 52% of this group reported not using LSTF measures.

Relationships were also highly significant between changes in use of both car alone and public bus and the number of measures of which respondents were aware. Relationships between changes in use of both cycling and walking and the number of measures of which respondents were aware were not statistically significant.

5.3.3 Explanations for changes in mode use from panel survey and follow-up interviews

In section 5.2.2 it was noted that the net percentages of panel respondents using different modes (as their 'normal' mode) remained relatively stable over the six waves of the panel survey. However, the net stability in mode shares masks considerable 'churn' at the individual level with about 10% of respondents changing their normal mode at each wave. Changes to and from each pair of modes were relatively symmetrical. For example, there were 61 changes from car alone to cycling, and 64 changes from cycling to car alone. Switches between car alone and car share, and between car alone and cycling (in either direction), were the most numerous pair-wise changes.

On each occasion when respondents indicated that their normal mode was different to that reported at a previous wave, they were asked to provide a brief explanation in their own words of why they had changed their normal mode since the last survey. The explanations given suggested that in many cases commuters did not have a single mode that they used every time, but rather that they mixed modes over time (during the working week or at different times of year). In other words, a change in normal mode reflected a change in the balance of modes that they used rather than a complete change in how they got to work. This was corroborated by analysis of the one-week commuting diaries collected from the panel survey, which revealed a high degree of modal mixing. For example, in wave 1, 11% of respondents solely cycled to work during the survey week, but 23% of respondents reported cycling on at least one day. In wave 1, 39% of respondents solely drove alone, but 61% of respondents drove alone on at least one day.

In order to better understand why panel members made changes to their normal mode, and to explore the self-reported explanations for these changes, a sub-set of participants was selected for follow-up telephone interviews. The responses of 37 people who changed their normal mode from car alone to cycling, or vice versa, at least once during the study were selected for further analysis. Changes were either attributed to life events, day-to-day variations in work or family routines, changes in access to vehicles, season of the year or changes to transport services and systems. In the latter case, this included measures taken by local authorities and employers to discourage driving alone (e.g. parking restrictions) and encourage use of other modes (e.g. cycling information, events

and on-site facilities). This supports the view that LSTF measures played a facilitating role in some individuals' decision to commute more often by sustainable modes, or to maintain existing use, even if they were not the main reason.

An analysis was carried out of the panel survey data to investigate if transitions away from driving alone between waves were associated with exposure to LSTF interventions and other personal circumstances. No statistically significant association was found between sustainable transport promotion visits to the workplace and any of the transitions. However, individually reported awareness of sustainable transport measures increased probability of a transition from car alone commuting to partial car alone commuting by 1.46 times (significant at 95% confidence level) and from partial car alone commuting to no car alone commuting by 1.47 times (significant at 95% confidence level). This suggests that sustainable transport measures can facilitate commuters in taking incremental steps to reduce their car alone commuting. It is acknowledged that the causal relationship is uncertain. Those workers making these transitions may have been prompted to do so for other reasons and actively sought information about sustainable transport options.

5.4 Impacts of specific LSTF interventions

The second research question relating to modal shift was: *What LSTF interventions have the greatest impacts on car alone mode share and how is this affected by context (e.g. characteristics of location, employer, and employees)?* This is answered with reference to the 2016 employee travel survey, the North Bristol Commuter Panel and the 2014 and 2015 bus user surveys.

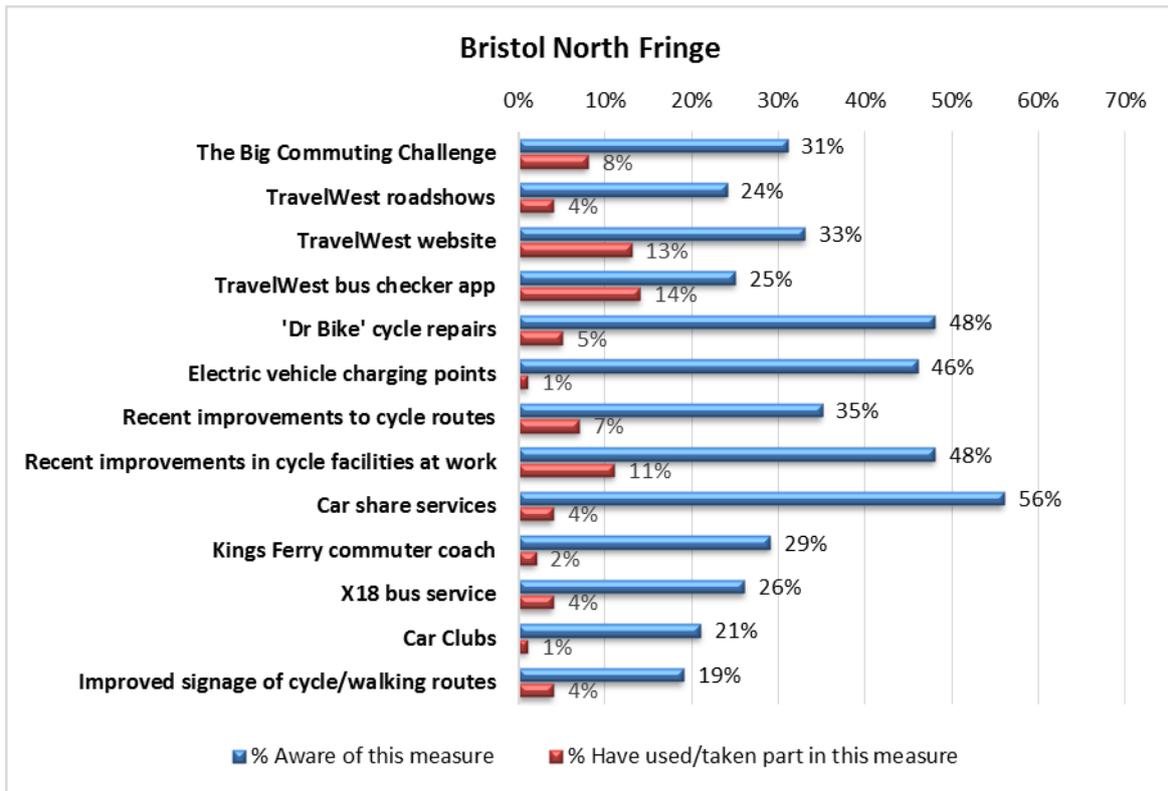
5.4.1 Awareness and use of specific LSTF measures

Figure 5-4 and Figure 5-5 show the proportion of the 2016 employee travel survey samples who reported that they were aware of individual LSTF-supported measures, and the proportion who reported that they had used or participated in them.

The measure to have attracted the greatest awareness was car-share services (56% and 38% respectively in North Fringe and Ports area). Awareness levels of new bus services serving the North Fringe and Ports area varied from 12% to 29%. Cycling-related measures attracted high levels of awareness. In the North Fringe, 48% of respondents were aware of the 'Dr Bike' repair services, and the same proportion was aware of improvements to on-site cycle facilities at work. The latter reflected both investments made by employers themselves and LSTF employer grants awarded to support improvements such as new cycle parking, changing facilities and lockers. In the Ports area, where fewer LSTF grants had been awarded and fewer employees cycled to work, awareness of improvements to on-site facilities was lower at 27%. 31% of North Fringe respondents were aware of the 'Big Commuting Challenge' – an annual competition to encourage all forms of sustainable travel.

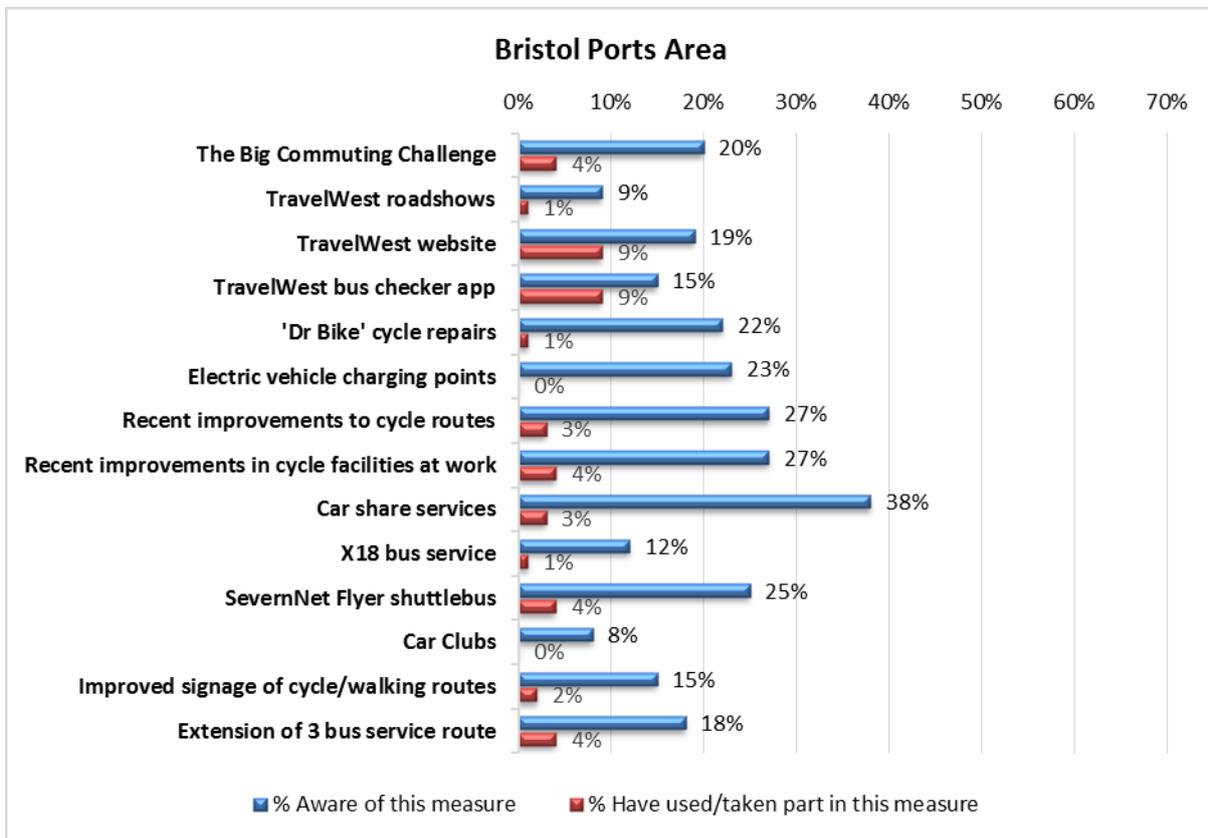
Levels of usage of LSTF measures were considerably lower than levels of awareness. The proportion of respondents who had used individual services or facilities, or participated in an event, varied from 0% to 14%. 11% of respondents in the North Fringe had used improved cycling facilities at work. This is consistent with the previously reported relatively high (and increasing) levels of cycling in the North Fringe. Levels of awareness and usage were more closely aligned for measures such as the new 'bus checker app' for smart phones (25% aware and 14% used in North Fringe).

Figure 5-4: Awareness and use of LSTF measures in the North Fringe



Sample size = 5313

Figure 5-5: Awareness and use of LSTF measures in the Ports area



Sample size = 543

5.4.2 Impacts of LSTF measures on mode use

To assess which LSTF measures had the greatest impact on mode use, relationships between respondents' use of specific measures were cross-tabulated with self-reported changes in mode use based on responses to the 2016 employee travel survey. Comparing the relationships between use of individual measures and car alone use suggests that the following measures were both the most used, and also linked to a higher proportion of respondents using car alone less than using it more:

- TravelWest bus checker app: 724 had used it of whom 22% were using car alone less, compared with 18% using car alone more.
- TravelWest website: 705 had used it of whom 23% were using car alone less, and 17% using car alone more.
- Recent improvements to cycle facilities at workplace: 563 had used these of whom 32% were using car alone less, and only 14% using car alone more.
- Big Commuting Challenge: 405 had participated in this of whom 27% were using car alone less, and 16% using car alone more.
- Recent improvement to cycle routes: 347 had used these of whom 32% were using car alone less, and 12% were using car alone more.

When use of specific LSTF measures was cross-tabulated with reported changes in use of relevant, modes (e.g. use of workplace cycling facilities with changes in cycling levels) a stronger association could be seen. For example, 39% of those who had used on-site cycling facilities were cycling to work more often, compared with 16% who were cycling less and 39% who were cycling the same amount.

These associations do not, of course, suggest a direction of causality. Respondents to 2016 employee travel survey were also directly asked whether LSTF measures had made a difference to the way they travelled to work. To get a stronger indication of causality, self-reported changes in car alone use were cross-tabulated with respondents' perceptions of whether LSTF measures had made a difference to the way they travelled to work.

Of the 5222 respondents from the North Fringe and Ports areas who answered this question, 2.5% (133) said they had made a large difference and 14.5% (757) said they had made a little difference. Of those respondents who reported using car alone less than two years ago, 29% said that the listed measures had made a little, or a lot, of difference to the way they travel to work. To put this in the context of the overall response, the 290 respondents who were driving to work (alone) less than two years ago, and who also said that LSTF measures had made a difference to their commute, constituted 5% of the total survey sample (of 5856 respondents).

When changes in car use were cross-tabulated with the influence of measures among respondents who had used specific initiatives, a closer relationship was found. For example, among those who had used on-site cycling facilities and were also driving to work less often, 58% said the listed measures had made a little, or a lot, of difference, compared with only 37% who said they had made no difference. However, only 105 people were in this category, constituting 2% of the total sample.

This indicates that specific measures had a positive influence on reducing car use among a small proportion of individuals.

5.4.3 Impacts of LSTF-supported bus services

The surveys carried out on the LSTF-supported X18 and Kings Ferry bus/coach services in 2014 and 2015 provided an additional source of information on the influence of these two services on car use. Both services linked the North Fringe to residential areas which previously lacked direct public transport access. On-board surveys carried out in 2014 found that 54% of morning peak commuters inbound to the North Fringe reported having previously made the trip by car and 15% had not made the trip previously. This suggests that the services were effective at attracting car users. Similar surveys in 2015 found 33% of respondents had not made the trip previously, which may be an indication that the services were enabling North Fringe employers to reach a wider employment catchment area. Both services experienced moderate and sustained growth in users over time. Since March 2015, subsidies for both of these bus services were no longer available and eventually, after some service alterations, they ceased to operate by early 2017.

5.5 Changes in satisfaction with the journey to work

The third research question relating to modal shift was: *What changes in perceptions and attitudes towards low carbon travel alternatives are found to occur for employees working for businesses in strategic employment sites and how is this affected by exposure to LSTF interventions?* This has mainly been answered by responses obtained on satisfaction with the journey to work from the employee travel surveys.

5.5.1 Satisfaction with the journey to work by mode

This question was answered by comparing respondents' levels of satisfaction with their journey to work in 2014 and 2016, using the employee survey data. Respondents who walked or cycled were most satisfied with their journey to work in both years. Among those who walked, 45% were very satisfied in both 2014 and 2016, and a further 31% were quite satisfied in both years. Cyclists were not quite as happy as walkers, with 28% very satisfied in 2014 and 27% very satisfied in 2016.

The mode groups where the greatest changes in satisfaction levels occurred were bus and train travellers. The proportion of public bus users who were either very satisfied or quite satisfied rose from 31% in 2014 to 38% in 2016. The proportion who were either quite dissatisfied or very dissatisfied fell from 47% to 41%, but nonetheless bus travellers remained the most dissatisfied of all mode user groups. Among train travellers, the share of those either very satisfied or quite satisfied increased from 41% to 45%, whilst the proportion of those quite dissatisfied or very dissatisfied fell from 37% to 31%. Overall, the evaluation period saw a positive change in satisfaction with their commutes among public transport users.

Among car alone commuters and car sharers, the share of those quite satisfied or very satisfied remained similar over the two years, but there was a rise in those either quite or very dissatisfied. For car alone commuters, this category increased from 27% to 35%, and for car sharers it rose from 30% to 37%. By 2016, these levels were almost as high as those for bus users.

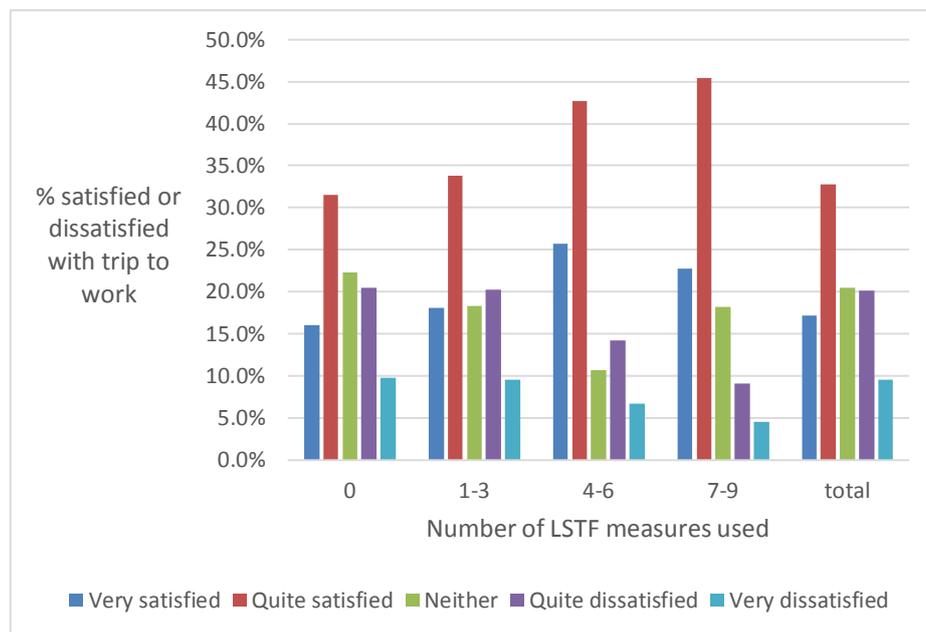
5.5.2 Satisfaction with the journey to work and LSTF measure awareness and use

An association was found between commute satisfaction and the number of LSTF measures which respondents had used, but not between commute satisfaction and the number of LSTF measures of which respondents were merely aware. Figure 5-6 shows that the proportion of respondents who were quite satisfied or very satisfied increases as the number of measures used rises. However, the number of respondents using 4 to 6 measures or more is small. Sixty three percent of respondents had not used any measures at all (compared with only 14% who were not aware of any measures).

The association between higher commute satisfaction and greater use of LSTF measures might be explained by the previous observation that cyclists have a higher than average propensity to be satisfied with their commute, and are also more likely to have benefitted directly from the listed LSTF measures. Sixty six percent of those who had cycled to work on the day of the survey had used between 1 and 6 measures, compared with only 36% across the sample as a whole.

Those who had travelled to work by public bus in 2016 had also used a higher than average number of measures, with 61% having used between 1 and 6. It was noted in section 5.5.1 that although commute satisfaction was still relatively low among bus users, it had increased by 5% points between 2014 and 2016.

Figure 5-6: Satisfaction with the journey to work and number of LSTF measures used



Sample size = 5856 (both North Fringe and Ports areas); Missing cases = 64 (1.1%)

5.5.3 Satisfaction with the journey to work of passengers using LSTF-supported bus services

The surveys carried out among passengers of the two LSTF-supported bus services in 2014 and 2015 offered an additional view of satisfaction levels among bus users. Overall satisfaction levels with these two services were considerably higher than the satisfaction levels with public bus services in general revealed by the results of 2014 and 2016 employee surveys. This demonstrates that the objective of establishing public transport services that were rated highly by commuters was achieved.

6 Findings: Economic impacts

The research relating to economic impacts was designed to answer the following research questions:

- *RQ 2a: What are the impacts on business performance (objectively and subjectively measured) of the LSTF programme in terms of: (i) Operational transport issues; (ii) Commuting and staffing issues; and (iii) Productivity?*
- *RQ 2b: How do the impacts on business performance vary by type of business, location and site characteristics and exposure to LSTF interventions?*

These questions were addressed principally through the use of semi-structured interviews to elicit the perceptions of one or more senior managers at each of the 24 participating employers in 2014, and at each of the 21 employers which participated in 2016. The qualitative analysis of the interviews explored senior managers' perceptions of the economic impacts of the LSTF by considering, firstly, the relative importance they placed on different commuter and operational transport issues, and the perceived effect of these issues on the economic performance of their businesses. The role which managers saw sustainable transport as playing within this broader transport context was then explored. The analysis identified consistencies and some changes in managers' attitudes and perceptions from 2014 to 2016 and examined this with reference to measures undertaken over the two years to reduce single-occupancy car travel. It also explored managers' understanding and assessments of the LSTF programmes within the intervention areas, and factors which contributed to differing views amongst businesses and locations. Findings are summarised below in the following order:

- Perceived impacts of sustainable transport on business performance
- Awareness of the LSTF and specific measures
- Employers' overall assessment of the LSTF
- Differences in perceived impacts of the LSTF programme by employer characteristics

6.1 Perceived impacts of sustainable transport and LSTF programme on business performance

A consistent theme across the interviews was that transport impacts on business performance, whilst significant, were indirect and hard to measure – particularly with regard to commuting. For example, improvements to the commute experience were thought to bring about productivity gains by enhancing staff wellbeing, but attempting to quantify this was not something which employers had considered. Similarly, whilst many believed that sustainable transport options widened their recruitment pool or contributed to staff retention, they lacked sufficient ‘hard evidence’ to quantify this in financial terms. The economic impacts of LSTF measures were therefore difficult for employers to assess.

However, sustainable transport initiatives in general were seen as an important part of the ‘mix’ of transport investments required to ensure smooth business operations, including movement of staff between collaborating organisations within an area, as well as supporting recruitment, retention and productivity of appropriately skilled staff.

6.1.1 Commuting, staff issues and productivity

In both 2014 and 2016, staff commuting was considered by the majority of interviewees in the North Fringe to be the most significant transport issue for their business. Commuter travel was also the focus of the WEST LSTF business engagement programme. In the Ports area, concerns about operational transport were also apparent. Overall, however, there was a correspondence between employer concerns about commuter travel and the focus which the WEST business engagement programme placed on improving the commute experience.

Whilst commuter travel might not directly affect the operation of a business overall, it was seen as an important contributor to staff satisfaction, and particularly important for recruiting and retaining staff with specialist skills. Poor transport access was also thought to reduce the pool of potential recruits to jobs at lower skill levels, and could therefore have a direct impact on those businesses with a high proportion of lower-paid staff. Within this context, sustainable travel options for employees were seen as an asset to employers, chiefly because they could improve staff satisfaction and morale, but also because they could help widen the recruitment pool among those who did not have access to a car. Improved staff morale, as well as fitness benefits to those who switched to active travel modes, were thought to offer productivity benefits to the organisation.

6.1.2 Operational transport issues

The baseline interviews confirmed that the most important operational transport issues for the case study businesses fell into three categories: deliveries and logistics, business travel, and client/visitor access. Among these, the WEST LSTF programme mainly targeted local business travel. One such measure was support for on-site pool vehicles, some electric, which could remove the need for mobile staff to use their own car to commute to their work base. In 2016, managers at employers struggling with staff dissatisfaction caused by insufficient on-site parking believed that measures such as these had offered indirect benefits. The Kings Ferry Business Shuttle (an adjunct to the LSTF-

supported Kings Ferry Commuter Coach) had been valued by the businesses using it, as it had reduced the costs from taxi use for local business travel.

6.2 Employers' knowledge and opinions on LSTF and related sustainable transport measures

6.2.1 Awareness of the LSTF and specific measures

The proportion of interviewees who said they were aware of the LSTF rose from about one third in 2014 to one half in 2016, but the more senior their position, the less likely they were to have a working knowledge of the Fund. A small number of the interviewees were more familiar with the Fund because they had liaised with the SusCom and SevernNet business networks on behalf of their company. Most of the managers interviewed, however, said this role (and associated knowledge) was delegated to a member of his or her team.

By 2016, cycling-related improvements, both on and off site, were more likely to have come to managers' attention than other measures, and elicited the most positive responses. The majority of employers had received support for cycling in the form of repair kits and free cycle maintenance sessions (Dr Bike). Moreover, the majority of LSTF employer grants, which 12 of the businesses had received (some had been awarded several) supported improved on-site facilities such as cycle parking, lockers and changing facilities. Several employers had also benefitted from loan bikes. Many had noticed improvements to cycle lanes, paths and signage in their area, including in Avonmouth, where recent improvements (although not funded by LSTF) to an arterial road were judged to have made it much safer for cycling.

There was also a high awareness among the senior manager interviewees of the TravelWest 'Roadshows', which had visited all the North Fringe employers at least once, and the annual Big Commuting Challenge. In the North Fringe, the Kings Ferry Commuter Coach service was better known than other LSTF-supported bus services. The Kings Ferry Business Shuttle had been valued by those businesses which used it. In the Avonmouth area, there was some awareness of the SevernNet Flyer shuttlebus service (not directly funded by LSTF), and some had noticed improvements to local cycle paths.

Many of the employers had benefitted from the installation of LSTF-supported electric vehicle charging points, and some saw electric vehicles as the most likely area for growth in sustainable transport in the future. This was linked to the view that many people needed, or wanted, to commute by car due to other 'life factors', such as the decision to live in a rural area. Several larger employers had received support for electric pool cars, normally provided through the car club Co-wheels. However, electric cars were mainly seen as a niche area, and one which did not suit employers whose staff travelled long distances for work.

6.2.2 Employers' overall assessment of the LSTF

In 2014, all interviewees had said they supported improvements to sustainable transport in principle. They thought LSTF measures could be of benefit to their business to some degree, although many thought that this was an indirect benefit in terms of improving employee

satisfaction, or contributing to a sustainability agenda, rather than something which might bring tangible, quantifiable benefits to the business. Many thought that sustainable transport measures offered more to individual employees than to the business directly; this was a typical view in those businesses in the Ports area which were not experiencing any recruitment difficulties or restrictions on parking. In 2016, views about the potential of sustainable transport measures remained positive, and some felt that benefits accrued so far were becoming more tangible.

6.3 Differences in perceived impacts on business performance by employer characteristics

The differing perceptions among the interviewees of the relationship between transport needs, business performance and role of the LSTF were influenced by factors such as the employer's sphere of activity, the main types of job undertaken by its staff, organisation of the working day, and geographical location. Location and site characteristics – especially parking availability – were particularly important in framing the senior managers' perceptions of sustainable transport.

For many, better provision of sustainable transport was seen as an essential requirement to reduce car parking demand; on-site parking was close to, or had already reached, full capacity for several employers in 2014. It was thought that better transport infrastructure, including cycle routes and bus services, would contribute to the desirability of their areas in terms of attracting business and skilled employees. By 2016, the pressure on parking at some employer sites had reduced due to either a fall in staff numbers or an increase in the number of parking spaces, but at others it remained an important and costly issue (necessitating for example, a parking manager role in the organisation, or the provision, of an employer bus).

Employers experiencing the type of parking and recruitment pressures described above were especially keen to engage with the LSTF, and were positive about the contribution it had made over the two years, even if impacts were limited so far. This was seen as an argument for greater and more sustained efforts to improve sustainable travel. For example, one senior manager in the North Fringe noted in 2016:

“...there may not have been as much impact this time round but I am guessing it's one of those things that takes quite a few years and that there needs to be a constant stream of different initiatives..... I just think it's changing paths and cultures. It's a long term game when you're not in the city centre. So I think there needs to be a sort of continuous effort.”

Those employers not facing such pressures were generally less concerned, but regarded LSTF measures as 'good to have' because of their association with staff wellbeing. In considering the benefits of sustainable transport options in 2014, another senior manager in the North Fringe said:

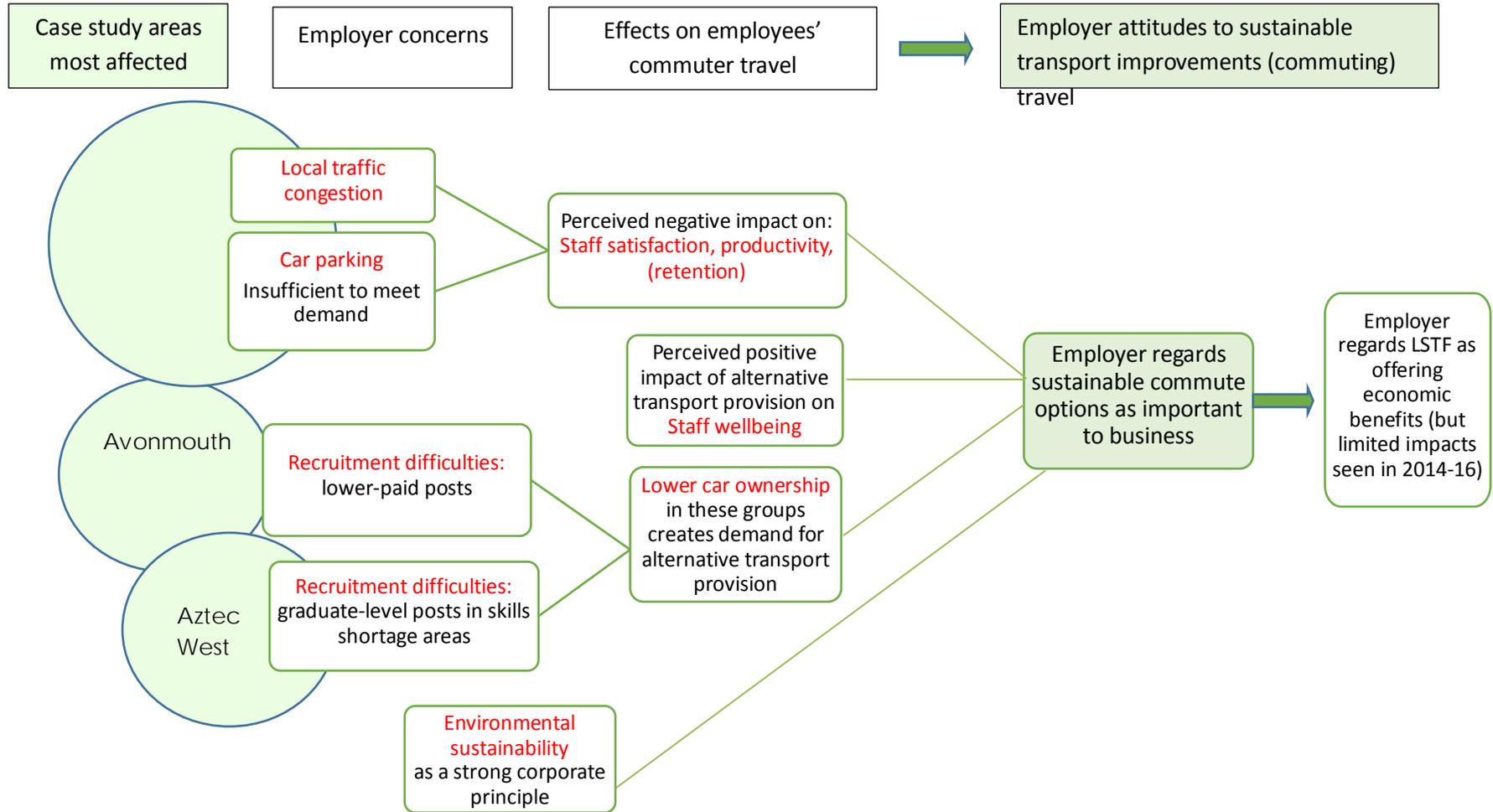
“I think it's a cultural benefit; it's a benefit for employees. It's not direct. You know, we don't make more revenue because we do these things, or as far as I'm aware, I haven't seen any correlation there. We do have happier employees and happier employees is a good thing to have”.

Figure 6-1 identifies factors contributing to positive attitudes among employers to the LSTF from the point of view of commuting. Conversely, businesses not experiencing 'push factors' of this nature were more likely to be ambivalent. It identifies transport concerns and how these affect staff travel

to work and ultimately attitudes to LSTF. It highlights the three strongest drivers associated with positive employer attitudes to sustainable transport investment and interest in engaging with business networks and local authorities on transport issues. The drivers are: on-site parking insufficient to meet staff demand; local traffic congestion causing delays and stress to employees; and recruitment difficulties linked to poor public transport, cycling and walking access to particular areas. Traffic congestion and parking restrictions caused dissatisfaction among staff, which needed to be mitigated by improving alternative travel options. Access by alternatives to the car were required by those businesses which needed to recruit staff who could not necessarily afford to, or did not wish to own a car. Even those employers who were not subject to these issues saw staff satisfaction benefits in offering a good choice of travel options. Environmental and corporate social responsibility also served as a driver for some employers to engage with the LSTF and see actual, or potential, benefit from it.

Factors contributing to positive attitudes among employers to the LSTF from the point of view of operational transport practices were also considered. With the exception of local business travel, LSTF measures were seen as having a lesser impact on business operations than on commuter travel. This is unsurprising given that the LSTF was not targeting freight transport. Direct economic pressures (fuel costs) were the main driver for maximising efficiency in transport logistics. More sustainable business travel was also motivated by other drivers such as voluntary carbon reduction targets, staff health and safety, and effective use of travel time (e.g. working on the train). Some SES Case Study businesses connected sustainable travel practices with new businesses opportunities, in the form of sustainable products (e.g. biofuel for buses), or by contributing to their image as environmentally responsible businesses.

Figure 6-1: Factors contributing to positive attitudes among employers to sustainable commuter transport and the LSTF



7 Findings: Delivery and Process

Research on the effectiveness of the process of delivering sustainable transport measures, through business engagement, in the West of England strategic employment sites (Research Aim 3) between 2014 and 2016 sought to answer the following research questions:

- *RQ 3a: What level of engagement was achieved with employers and employees and what factors led to increased engagement?*
- *RQ 3b: What measures have been delivered successfully and why, and what measures have been less successful and why?*

Quantitative findings on the level of employer engagement achieved by LSTF business engagement teams and business networks are drawn from LSTF monitoring data supplied by South Gloucestershire Council and Bristol City Council. The employer interviews provided qualitative insights from senior managers on their company's engagement with the councils and business networks in the field of sustainable transport. Finally, the LSTF work package closure reports written by the local authority Business Engagement Account Managers (BEAMs) provided reflections on the business engagement process and the measures which had been delivered with greater or less success over the two years.

Engagement with businesses was delivered chiefly through LSTF BEAMs. The BEAMs offered a number of incentives to employers to encourage them to engage, including: 50% employer grants; installation of Electric Vehicle Recharging Points (ECVPs); emergency cycle repair kits; Sustainable Travel Business Awards; the Big Commuting Challenge; site visits by the TravelWest Roadshows and Dr Bike cycle repair service; and free use of car-share services.

Employers and individual employees also benefitted from LSTF inventions funded under other headings, such as: cycle route improvements; bus service and bus information improvements; and general information improvements such as the new TravelWest website. Nearly all of the SES Case Study employers in the North Fringe were 'intensively engaged' for at least part of the evaluation period. In the Ports area, two of the nine case study employers were intensively engaged by LSTF officers during the period. The following specific delivery issues were noted:

- At the start of the evaluation period, employers in the North Fringe Area Travel Plan area were engaged by the South Gloucestershire BEAM, whilst the Portside Area Travel Plan area was allocated a BEAM to work across the three local authorities which that area spanned (Bristol City, North Somerset and South Gloucestershire councils). However, in July 2014 the WEST LSTF Delivery Board decided to terminate the Portside business engagement programme prematurely, having concluded that no value could be added through business engagement until more capital investment had been made in transport in the area. Businesses in the Ports area continued to be supported by business engagement officers from the constituent local authorities (chiefly Bristol City Council), whilst LSTF support was directed into infrastructure improvement. The North Fringe business engagement work continued throughout the period without interruption.

- The sub-regional LSTF team experienced some difficulties in coordinating efforts across the four local authorities participating in the WEST LSTF programme, although localised budgets were seen as helpful.
- The business networks – North Bristol SusCom and SevernNet - played a key role in liaising between the employers and LSTF staff, and delivery was most effective when the networks and LSTF BEAMs worked closely together. Coordination was particularly smooth in the North Fringe. LSTF programme managers recognised the vital importance of working in partnership with the two networks. Joint action through the networks gave employers an opportunity to help shape local transport policies and measures.
- The senior manager interviews revealed that employers were generally more familiar with the directors of the two business networks than they were with LSTF staff, although some employers in the North Fringe (particularly those who had some direct involvement in transport issues) had also worked closely with LSTF business engagement officers. Frequent turnover of LSTF BEAMs, exacerbated by the short-term nature of employment contracts, created a degree of discontinuity in the relationships built up by the BEAMs with individual employers.
- Various data sources suggested that cycling-related LSTF measures were delivered particularly successfully at the levels of both employers and employees. This included employer grants awarded to improve on-site facilities for cyclists, and the Dr Bike repair service. Individuals who had visited a TravelWest Roadshow and received a follow-up service expressed a high degree of satisfaction with the information provided by the travel advisers and the follow-up services. LSTF-supported commuter bus and coach services were launched successfully, achieving high levels of general awareness and very high customer satisfaction, but the longer-term economic viability of such services proved problematic and outside the control of the WEST LSTF programme.

8 Conclusions

This chapter summarises findings with respect to the three aims of the SES Case Study before considering longer term prospects for the impacts of sustainable transport promotion at the two strategic employment sites in the West of England. It finishes with recommendations on how the findings from this research can inform the delivery of future sustainable transport programmes that target strategic employment sites and business parks.

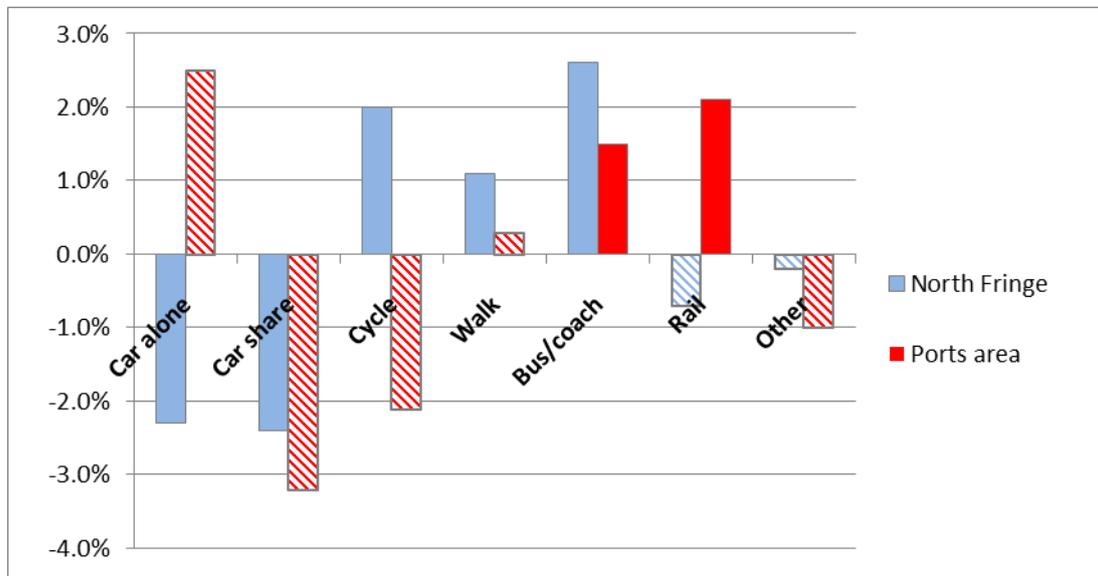
8.1 Modal shift

The first aim of the SES Case Study was to establish the impact of a package of sustainable transport measures on modal shift in strategic employment sites, and understand which interventions were most effective in different contexts.

Figure 8-1 shows that there were statistically significant decreases in mode share for car alone (2.3% points) and car sharing (2.4% points) among North Fringe employees between March 2014 and March 2016. There were statistically significant increases in mode share for cycling (2.0% points), walking (1.1% points) and bus use (2.6% points). There were minimal changes in mode share among

Ports area employees. After accounting for differences in sample characteristics in the two survey years, it was deduced that the probability of driving alone was 10% less likely in 2016 for North Fringe employees and the probability of using bus was 35% more likely (both statistically significant), but changes in probability of using other modes were not statistically significant.

Figure 8-1: Mode share % point changes for North Fringe and Ports area



Note: Statistical significance at 95% level shown in solid colour.

Looking at longer-term trends in mode share it was apparent that there was a more substantial reduction in car alone mode share of 4% points between March 2013 and March 2014 among North Fringe employees. This indicates that the WEST LSTF programme might have had a greater impact in its first year after which there was sustained impact at a lower level. It is also notable that reductions in single occupancy car use after 2013 in the North Fringe occurred against a backdrop of petrol price reductions, of a national trend of increasing car use and a regional trend of increasing car commuting.

To assess the role of the WEST programme in contributing to the mode share outcomes identified above, a number of matters should be considered. Firstly, a reduction in single occupancy car-use between March 2014 and March 2016 was statistically significant at only three out of 20 SES Case Study employers, all located in the North Fringe (single occupancy car-use increased among employers in the Ports area). Reductions in car parking availability had occurred at two of these employers (NHS Trust and University). Moreover, the NHS Trust was in some ways untypical because it had undergone a major site relocation in 2014 (after the March 2014 survey). Further analysis of the employee travel survey data showed that changes in mode share between March 2014 and March 2016 were explained well by changes in parking availability and not by the extent of exposure to LSTF measures (as measured at the employer level).

Interviews with senior managers showed that restricted on-site parking availability was a key motivator to engaging with sustainable transport initiatives such as the LSTF, as part of a drive to improve alternative travel options for staff. The NHS Trust faced particular challenges in managing a site relocation which involved a significant reduction in car parking spaces for staff. By 2016, parking

was still an emotive issue among staff at those employers which needed to manage demand. However, some interviewees felt that discontentment over parking restrictions and charges was reducing as people were no longer assuming that they had a 'right' to drive to work and park without charge. This could be interpreted as a gradual cultural change, in which commuting by other modes was no longer considered unusual; cycling to work, in particular, was coming to be seen as more 'normal' at many employers in the North Fringe. The senior manager interviews, the 2016 employee survey and the panel surveys showed a high awareness of LSTF-supported cycling measures, which may have been contributing to this gradual process of change.

In exploring further whether there was evidence of a direct relationship between LSTF interventions and observed mode changes, the analysis of the employee travel survey data showed a decreased probability of car alone commuting, and increased probabilities of cycling and bus use, for individuals who used LSTF measures (but not if they were merely 'aware' of LSTF measures). This does not reveal direction of causality, although some insights into the self-reported influence of measures on individual behaviour were provided by the March 2016 employee survey. Of those respondents who reported using car alone less than two years ago, 29% said that the listed measures had made a little, or a lot, of difference to the way they travel to work. However, 64% said that the measures had made no difference. The closest associations were seen between using specific measures, e.g. on-site cycling facilities, and increasing use of the relevant mode (in this case, cycling), although the numbers involved were small.

This suggests that specific measures had a positive influence on reducing car use among a small proportion of individuals. However, LSTF measures might have helped to maintain existing levels of sustainable transport use in the face of a wider trend of increasing car mode share for commuter journeys in South-West England during the study period.

Qualitative evidence supports the view that LSTF measures had played a facilitating role in some individuals' decision to commute more often by sustainable modes, or to maintain existing use, although they were rarely reported to be the most important reasons. The narrative within many individuals' explanations of mode choice was of change or stability reflecting their own personal circumstances (e.g. moving house or job location, taking children to school, other responsibilities and interests outside work, or a desire to be more physically active).

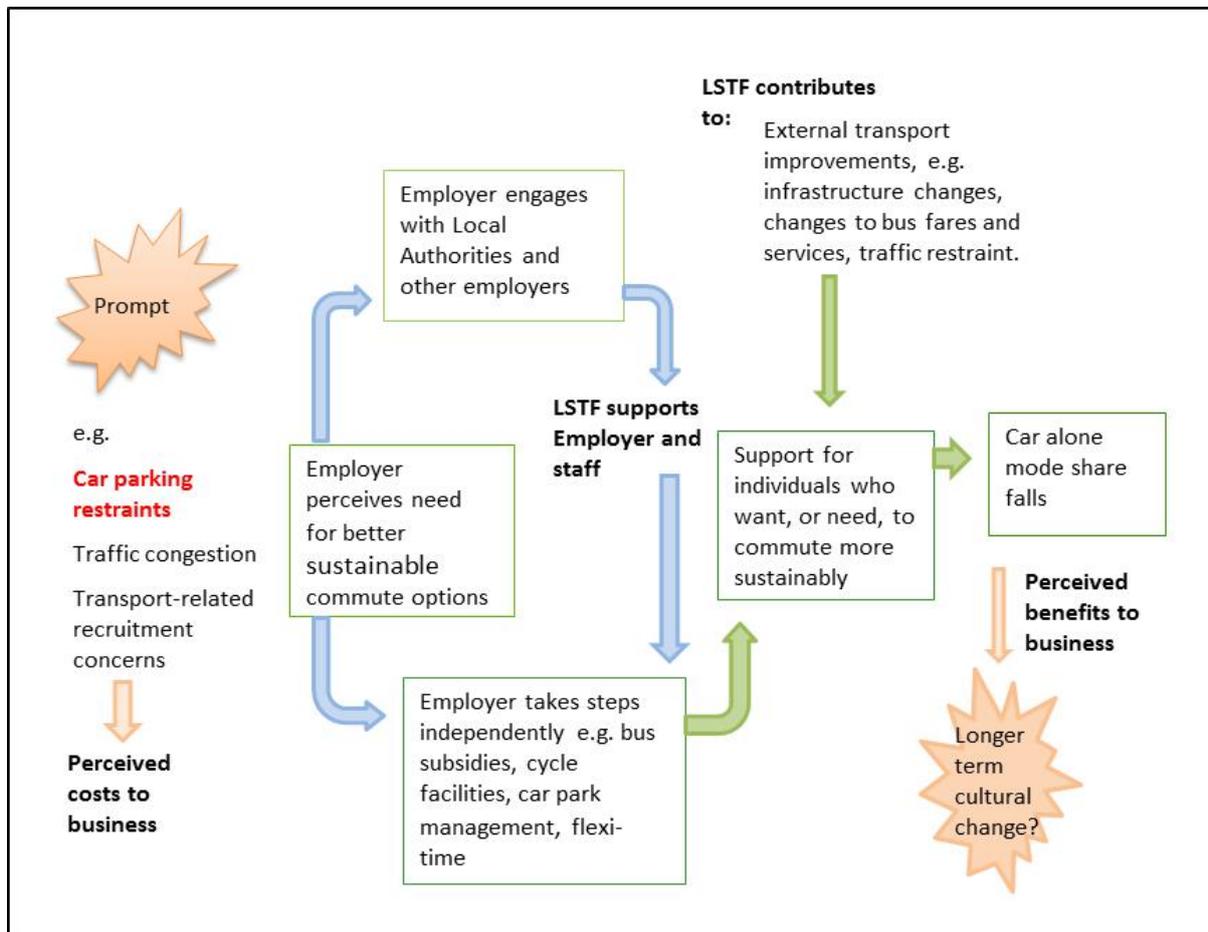
Taken together, the results above suggest that reduction in parking availability was the chief factor in mode share changes seen between 2014 and 2016 with the LSTF programme playing an important role in facilitating mode changes of individual commuters. There is evidence of a greater reduction in single occupancy car use for employers in the North Fringe in the first part of the LSTF programme (up to March 2014) and it can be argued that the programme helped consolidate those gains in the second part of the programme (between April 2014 and March 2016).

8.2 Economic impacts

The second aim of the SES Case Study was to assess the impacts on business performance, including access for existing and potential employees, of implementing sustainable transport measures in strategic employment sites.

Whilst senior managers believed that the economic impacts of LSTF and related measures were extremely difficult to quantify, the majority saw commuter travel issues as an important consideration with regard to their business performance. The role of LSTF funding within a ‘virtuous circle’ of movement towards more sustainable commuter travel is presented in Figure 8-2.

Figure 8-2: The role of LSTF interventions in the process of commute mode change



The interviews underlined that, essentially, employers need their staff to be able to get to and from work, and without getting unnecessarily stressed or delayed, otherwise productivity and wellbeing can be negatively affected. When this is threatened by factors which make car commuting more difficult, such as traffic congestion or the need to reduce parking, they see alternative travel modes as essential. Employers also wish to be able to recruit and retain the best people for the job, and when transport issues threaten this, they want to find solutions – including sustainable transport alternatives if appropriate. Employers in the SES Case Study who were adversely affected by issues such as congestion, limits on parking, and recruitment difficulties, tended to perceive a need for greater investment in sustainable transport. Faced with such pressures, they made their own investment in alternative transport options for staff, and were more willing to engage with the local authorities and other employers on sustainable transport, which in turn meant that they saw more benefits from LSTF business engagement measures. Even without such pressures, employers tended to be in favour of sustainable transport options because they are seen to contribute to staff well-

being, which indirectly benefits the business. However, for some this was a very marginal concern in the context of a challenging economic environment.

The senior managers' overall assessment of the LSTF and related measures by 2016 was that these were welcome steps in the right direction, but were insufficient to have made a significant difference so far. In the more congested parts of the North Fringe, it was thought that they had helped control, but not fully counteract, growing traffic volumes arising from new housing development in the area. In the Ports area, employees had had very little alternative to commuting by car in 2014. By 2016, improvements to bus and cycle access were starting to be noticed, but were not thought to be significant enough yet to have translated into commute mode change of any size (a perception supported by the results of the 2016 employee travel survey).

For most interviewees, this was an argument for greater efforts to improve and encourage the use of alternative modes, and for these efforts to be sustained over a longer time period. Those employers which had engaged actively with the LSTF – most of whom had benefitted from LSTF employer grants – saw publically funded investment as part of a collaboration in which they also bore a responsibility. These employers saw LSTF as useful 'leverage' for sustainable transport measures they wished to undertake themselves. LSTF grants could, for example, lend weight to arguments within an organisation for investment in sustainable transport measures at a time when employers faced many competing financial pressures.

However, it should also be noted that some senior managers in the Ports area did not see a strong, business-related need for growth in sustainable transport options – notably those businesses which were facing neither recruitment difficulties nor pressure on car parking. These were among a number of interviewees who believed that LSTF measures could accrue greater benefits to the individual than to the business. Some, in both the Ports area and the North Fringe, also expressed a strong view that travel to work was a matter of individual choice, in which they should not be dictating to their staff. This may partly be a reflection of a convention in the UK that commuting is, ultimately, the responsibility of the worker and not the employer. In some other countries, particularly in continental Europe, employers are expected to play a stronger role in the commuting options of their employees.

8.3 Delivery and process

The third and final aim of the SES Case Study was to review the effectiveness of the process of delivering sustainable transport measures in strategic employment sites.

The business networks, SusCom and SevernNet, were observed to have played an important part in developing and maintaining contacts with employers through which LSTF measures could be delivered by the LSTF Business Engagement officers. Joint action through the networks gave employers an opportunity to help shape local transport policies and measures. Because the networks represented the employers' own interests, they were perceived by the local authorities as offering 'credibility gains' to the work undertaken by LSTF officers - thereby overcoming possible cynicism on the part of some employers towards their local councils. The networks also provided important continuity in the face of staff turnover within the local authorities during the LSTF evaluation period and beyond.

8.4 Longer term prospects

The mode share time-series results for the SES Case Study employers in the North Fringe area generated from the 2014 and 2016 employee travel surveys and surveys in other years (see Figure 5-3) showed that car alone travel to work had been increasing prior to the WEST LSTF programme and reduced substantially in the first year of the programme (from 56.3% to 52.0%) after which there was further reduction between 2014 and 2016 (from 52.0% to 49.6%), during a period in which petrol prices fell and an increase in car commuting was seen in the South West of England more generally. Sustained growth in cycling has been seen since 2013 in the North Fringe area (from 10.5% to 14.4% between 2013 and 2016) and some growth in walking and bus use has been seen since 2014. This implies that the WEST LSTF programme may have had largest impact in the first part of the funding period, followed by sustained impact at a lower level subsequently.

Predicted use of sustainable travel modes in the future can be informed by commuters' levels of satisfaction with their journey to work. A comparison of respondents' levels of satisfaction with their normal mode of travel to work in March 2014 and March 2016 showed a marked increase in bus users' journey satisfaction by 2016, which suggests that the higher bus mode share demonstrated in 2016 may be maintained. However, this must be tempered by the findings that bus users were still the least satisfied group overall compared with users of other modes. The finding that those who walked or cycled remained the groups most satisfied with their commutes can be considered as a positive outcome of interventions to support these modes.

Patronage growth data and bus user surveys for two LSTF-funded bus services (X18 and Kings Ferry) showed they were successful in attracting car commuters when they were introduced and growth in users was sustained over time, although fewer new users over time were car commuters. This indicated that there was the prospect of these services continuing to contribute to maintain bus mode share. However, this depended on the bus services continuing to operate. Since March 2015, subsidies from LSTF for both of these bus services were no longer available. The North Bristol Commuter Coach service, originally run by Kings Ferry, was transferred to a new operator and new timetables and routes introduced (lengthening journey time). The X18 service continued with some adjustments to its routing and timetable, but by early 2017 both these services had ceased to operate.

The findings suggest that the gains of the WEST LSTF programme in increasing the share of commuting by alternatives to driving alone can be sustained if promotion of sustainable transport initiatives is continued (for example, to ensure new staff are encouraged to try alternatives as staff turnover occurs) and can be built upon further if it is possible to invest substantially in sustainable transport infrastructure and services (such as the Metrobus system currently being constructed). The evidence from this study shows that reductions in driving alone are most likely to take place where sustainable transport promotion occurs alongside restraints to driving from parking space reductions and congestion.