Department for Transport

ATKINS

Local Sustainable Transport Fund Case Study Evaluation – Impact of Sustainable Transport Measures on Town Centres

SUPPORTING TECHNICAL APPENDICES

Department for Transport

July 2017

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Document history

Job number: 5127520						
Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
Rev 1.0	Initial draft for DfT review	AL, EH, KQ, Accent	JR	JR	-	26/08/16
Rev 2.0	Version 2 addressing comments from DfT and Peer Reviewer	AL, Accent	JR	JR	JR	13/12/16
Rev 3.0	Updated draft responding to final comments from DfT (FINAL VERSION)	JR	-	-	-	03/03/17

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Part A - Introduction and Methodology

1. Introduction

1.1. Introduction

This chapter sets out:

- the study purpose and context;
- the evaluation aims and research questions; and
- the high level programme and timescales for the research.

1.2. Study purpose and context

The 2011 White Paper, 'Creating growth, cutting carbon', set out a vision for a sustainable local transport system that supports the economy and reduces carbon emissions. A total of £600 million was made available through the Department for Transport's (DfT's) Local Sustainable Transport Fund (LSTF) to deliver this vision. In total, DfT awarded funding to 96 sustainable transport packages from 77 local authorities between 2011 and 2015. Along with local contributions provided by all funded project teams, over £1 billion was invested in local sustainable travel.

A proportionate approach to evaluating the LSTF programme was developed, involving Annual Output Reports (to be produced by all 96 project teams), Outcome Monitoring Reports (to be produced by project teams delivering larger projects), and use of a small number of thematic case studies to inform detailed research projects on a few key priority questions where existing evidence was relatively weak and/or important. The evidence will be used by the Department for Transport to demonstrate to HM Treasury the value that has been derived from the LSTF programme of investment.

This particular study is one of four detailed research projects undertaken. It focuses on the **impact of sustainable transport measures on town centres**, using Redhill and Telford as case study locations. The study has been undertaken by **Atkins Limited** and **Accent Market Research Agency**, working with **Surrey County Council** and **Telford & Wrekin Council**.

Both Telford and Redhill are the focus for LSTF projects which seek to support the economic vitality and growth of town centres. They are both:

- medium sized centres of sub-regional importance;
- comprise a defined pedestrianised retail area surrounded by a major ring road or strategic route which currently acts to restrain growth of the town centre economy; and
- are the focus of significant wider regeneration investment over the next few years.

In addition, the level of LSTF-related investment in both locations is substantial – £8.8 million in Telford and £4.1 million in Redhill – and changes in transport outcomes (perceptions and behaviour) were expected to be significant.

1.3. Evaluation aims and research questions

The overall aim of the research is to **determine the impact of sustainable transport measures on town centres, and whether LSTF type initiatives can help town centres develop economically**.

The Department for Transport identified the following research questions to be addressed:

1. a. Has the perception of town centre accessibility improved?
   b. Do town centre users perceive that the LSTF measures have increased the attractiveness of walking and cycling into the town?
2. a. What modal shift, away from the car, has been generated in town centres as a result of the LSTF programme?

b. Has the number of people walking and cycling into / within the town increased? If so, on what days and during what time of the day has the change occurred?

3. a. Have changes in transport perceptions resulted in town centre users changing where they choose to shop and access services?
   b. What impact has the use of sustainable modes had on the dwell time of those visiting the town centre?

4. a. What positive economic impacts have LTSF measures had on town centre activities and retail businesses? Has the footfall increased? Has retail business confidence increased as a result of LSTF initiatives thereby helping to retain or attract businesses?

In addition, the Department for Transport expects case study evaluations to address the following evaluation themes:

- To produce targeted evaluations assessing the effectiveness of specific measures.
- To determine the extent to which observed outcomes can be attributed to LSTF investment.
- To determine what works, why, for whom and in which contexts.
- To determine whether impacts are geographically transferable, and identify lessons learnt to inform the delivery of sustainable transport initiatives in other locations.

1.4. High level programme and study timescales

Work to develop an evaluation approach to determine the impact of sustainable transport measures on town centres began in Spring 2013, with Atkins involvement commencing in November 2013.

Baseline ('before') surveys were undertaken in March to May 2014, at the end of Year 2 of the LSTF period. While this is late in the overall LSTF timeframe, the majority of implementation focused on Year 3. Baseline data therefore reflects an 'early implementation scenario', close to the 'before' situation.

Post implementation ('after') evidence was primarily collected between September and November 2015; six to nine months post investment, to reflect the availability of funding for this **Final Report**. This has resulted in a need to focus on short term outcomes rather than medium to longer term impacts.

2. Methodology

2.1. Introduction

This chapter describes the overall study methodology, including:

- the overall approach;
- the evidence base; and
- data issues and limitations.

2.2. Overall approach

Before and after study, informed by a Theory of Change model and contributional analysis

The overall approach to undertaking this evaluation has been structured around a 'before' and 'after' comparison of outcomes, informed by a 'theory of change' model (Figure 1).

The 'theory of change' describes the *assumed* process or logic by which LSTF investment in the two case studies is assumed to deliver changes in transport perceptions and behaviour and associated retail economy benefits. This can be thought of as the underlying hypotheses to be 'tested' during the research in order to address the research questions. It is based on a core input-output-outcome/impact model (which represents the relationship between scheme development, implementation, and change on the ground); along with consideration of barriers and enablers to delivery, and wider context and external factors.

The theory of change model has been used to identify data collection requirements, inform questionnaire design and topic guides, and define the structure of this report. The evidence collected has then been used to test three broad hypotheses:

A. LSTF investment within and on key corridors into the town centre improves perceptions about access by sustainable modes, in terms of ease of journey, attractiveness of environment, and safety and security. *(See **Chapters 7 and 14** for key findings)*

B. Change (improvement) in perceptions regarding access by sustainable modes, is associated with an overall change in mode use (greater use of sustainable modes). *(See **Chapters 8 and 15** for key findings)*

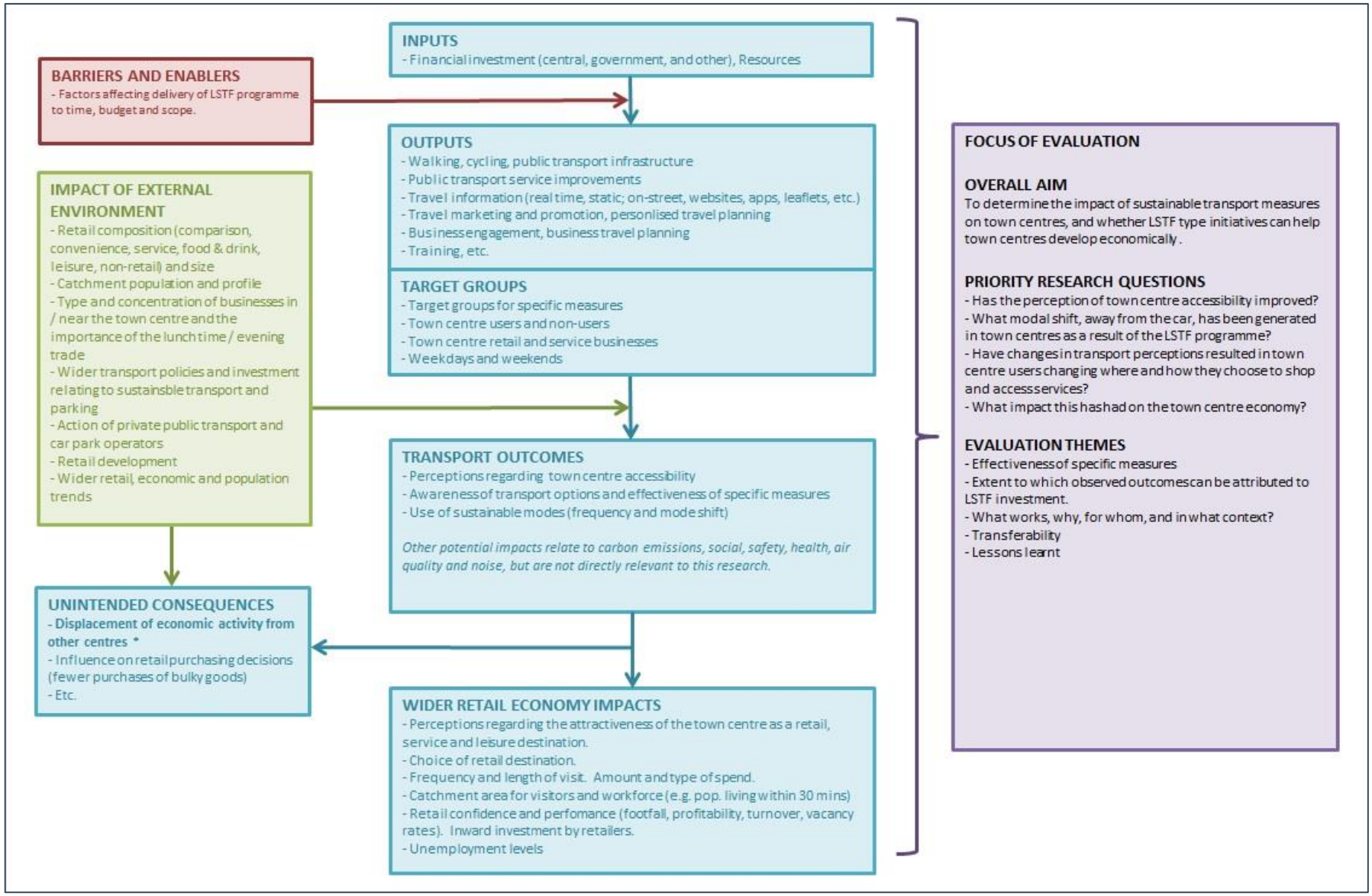
C. Change (improvement) in perceptions regarding access by sustainable modes, is associated with improved perceptions regarding the attractiveness of the town centre as a retail, service and leisure destination; which leads to an increase in frequency of visits, and strengthens the retail economy. *(See **Chapters 9 and 16** for key findings)*

These hypotheses are examined within the context of the wider environment, considering town centre characteristics, other regeneration and transport investment, and wider economic trends (**Chapters 6 and 13**); alongside an understanding of the rationale and objectives for the LSTF investment (**Chapters 4 and 11**), and the extent to which the schemes were delivered as intended, in terms of scope, programme and budget (**Chapters 5 and 12**).

The extent to which change can be attributed to LSTF investment has been estimated usng the following approaches:

- survey questions about specific LSTF elements and issues of causality in the questionnaires and topic guides;
- regression analysis to identify the relative influence of LSTF investment alongside other socio-demographic, behavioural aand attitudinal variables – recognising that this approach identifies levels of correlation rather than causality;
- corridor-based counterfactual analysis in Redhill; and
- consideration of the relative contribution of other drivers within the wider environment.

Figure 1. Theory of Change Evaluation Framework



However, it is recognised that estimating the level of attribution is particularly challenging given the complexity of the environments and the range of confounding factors, and that any conclusions drawn are indicative, based on the body of evidence available.

Counterfactual approach

Counterfactual analysis compares the observed results with those expected if the intervention had not been implemented - this is known as the 'counterfactual'. Differences in outcomes can then be used to infer the level of attribution (cause and effect) which can attributed to the intervention being evaluated.

Within Redhill, the LSTF measures comprise town centre and area-wide measures designed to benefit residents across the area; and walking and cycling investment designed to provide added benefits for residents to the north of the town centre. Residents living in the Northern Corridor will therefore experience a higher level of exposure to LSTF measures than those living elsewhere. This provides the opportunity for a corridor-based comparison between areas of high and lower exposure to LSTF measures – similar to a counterfactual analysis. The main strength of this approach is in its ability to minimise the confounding effect of different contextual environments affecting the case study locations and any comparator locations, which may mask any underlying changes relating to LSTF investment.

Consideration was given to using other town centres as controls, but was rejected due to difficulties finding genuine comparators, and the likelihood of the difference in contextual environments overshadowing any change due to LSTF investment.

2.3. Overview of evidence base

The evidence base for the research comprises a mix of quantitative and qualitative sources, which allow us to:

- identify a range of viewpoints and alternative explanations;
- test for consistency and divergence in the emerging findings;
- undertake in-depth investigation to identify causes behind conflicting evidence and explanations; and
- identify a best fit answer based on a range of evidence available.

The key evidence sources in each location are described below.

2.3.1. Questionnaire surveys

Two questionnaire surveys were conducted *before* and *after* the main phase of LSTF implementation:

- a face-to-face (CAPI[1]) on-street questionnaire survey was undertaken in the main retail area to collect evidence directly from town centre users; and
- a telephone (CATI[2]) questionnaire survey was undertaken with local residents to capture the broader views of those living in the area.

Before surveys were undertaken in March and April 2014; and after surveys were undertaken during October and November 2015[3].

Both surveys were designed to complement each other, with significant overlap in design. Both were structured around the following headings:

- Use of the town centre / Choice of retail destination
- Transport behaviour and factors influencing choice of mode for travel into the town centre
- Perceptions of town centre accessibility
- Awareness and effectiveness of sustainable transport initiatives
- Journey origin and background profile data.

[1] Computer Assisted Personalised Interviewing

[2] Computer Assisted Telephone Interviewing

[3] Due to timescale constraints on DfT funding availability for this study, it was necessary to undertake the 'before' and 'after' surveys at different times of the year. March / April and October are considered to be a broadly comparable months, and any seasonal (or weather) effects are expected to be minimal.

Both questionnaires captured the views of local residents who use the town centre. In addition, the town centre user questionnaires captured the views of those visiting from further afield; while the residents' survey captured the views of non- and infrequent users.

Town centre user questionnaires

The sampling approach involved the random interception of 1 in 3 people, and an initial screening question to ensure that the individual intercepted was visiting the town centre for a retail purpose. No quotas were used, in accordance with the methodology agreed with the DfT (significance tests are not valid if based on quotas). No financial incentives were offered to respondents.

The target sample size was 600 responses for the main Telford Shopping Centre and Redhill Town Centre, for both the before and after phases. This ensures a maximum margin of error of ±4% for a given proportion response rate (see Text Box 1 below). In addition, a further after only target of 150-200 responses was set for the newly opened Southwater retail development in Telford, which now forms a key part of the town centre, with access facilitated by the LSTF investment. In all cases the target sample was exceeded.

Table 1. Target and achieved sample sizes (Town centre user questionnaires)

	Before	After
Telford – Main Shopping Centre	Target = 600, Actual = 734	Target = 600, Actual = 704
Telford – Southwater	-	Target = 200, Actual = 235
Redhill	Target = 600, Actual = 659	Target = 600, Actual = 725

Survey shifts were undertaken between 9am and 6pm on weekdays and Saturdays, with some later shifts on Thursdays in Telford only (to 7:30pm). In the Southwater Development surveys were undertaken on Fridays and Saturdays to reflect peak periods of use, with some later shifts to capture evening visits.

No Sunday surveys were undertaken. This is recognised as a limitation, but is a reflection of the budget ceiling for the research.

No weighting factors have been applied to the data, as there is no robust evidence available on the age and gender characteristics of all town centre users. Furthermore, the use of weights would mean that any 'real' change in the age-gender profile of shopping centre users will not be reflected. This represents an issue in Telford where the opening of the Southwater development is perceived to have changed the profile of visitors to the town centre, although there is a lack of consensus on the precise nature of the change.

Text Box 1. Sample sizes and margins of error

Explanation

Samples are used to estimate what is happening across the total population. The margin of error expresses the maximum expected difference between the true population parameter and a sample estimate of that parameter. In general, the larger the sample the more robust the data obtained from the sample, and the smaller the margin of error.

The table below shows the margins of error for different response proportions, based on a 95% confidence interval.

Sample size	50% giving the same response	40% or 60% giving the same response	30% or 70% giving the same response	20% or 80% giving the same response	10% or 90% giving the same response
100	9.80	9.60	8.98	7.84	5.88
200	6.93	6.79	6.35	5.54	4.16
300	5.66	5.54	5.19	4.53	3.39
400	4.90	4.80	4.49	3.92	2.94
600	4.00	3.92	3.67	3.20	2.40

A sample size of 600 ensures a maximum margin of error for a given proportion response rate of ±4% (at the 95% confidence level). In other words, if the proportion of the sample travelling by car is 50%, then there is a 95% likelihood that the true proportion within the total population is within ±4% (46% to 54%). The margin of error reduces to ±2.4% if the sample proportion reduces to 10% or increases to 90%. It increases if the sample is reduced (as a result of

disaggregation of results), to a maximum of ±4.9% if the sample size reduces to 400, and to a maximum of ±6.9% if the sample size reduces to 200, for example.

The confidence interval for a given proportion is calculated as: $\mathbf{1.96} * \sqrt{(\boldsymbol{p_1}(\mathbf{1} - \boldsymbol{p_1})/\boldsymbol{n}}$

The confidence interval for the difference between two proportions (e.g. before vs. after) is calculated as: $\mathbf{1.96} * \sqrt{[(\boldsymbol{p_1}(\mathbf{1} - \boldsymbol{p_1})/\boldsymbol{n_1}] + [(\boldsymbol{p_2}(\mathbf{1} - \boldsymbol{p_2})/\boldsymbol{n_2}]}$

where p_n = population proportion in sample 1, 2, etc,; and n_n = the sample size for sample 1, 2, etc.

Significance testing

Confidence intervals have been calculated to determine whether the differences in the before and after samples represent a statistically significant difference in the wider population. Statistically significant differences are marked with an asterix (*) or *'sig'*. Regression analysis has also been undertaken (see **Appendix A**).

Representativeness of the sample

While the sampling approach used was random, the resultant before and after samples are not necessarily wholly representative – certain types of individuals are always likely to be more willing to participate in an on-street survey than others.

A comparison of the before samples for the town centre user and residents surveys identified a number of differences which may suggests certain groups of respondents are under- / over-represented in the town centre user datasets. For example, in Telford:

- The on-street before survey contained a higher proportion of female respondents and a higher proportion of those aged 50+ - compared to the full (rather than retained) residents' sample (and the wider Telford population). This may reflect a higher proportion of these groups using the town centre (which is expected to be the case in the week), but also a greater willingness amongst these groups to partake in a questionnaire survey.

- The on-street before sample included fewer infrequent visitors (less than once a month): 14% compared with 21% in the residents sample. The difference is likely to be due to a real difference in frequency of use, but also due to a greater chance of very frequent users being randomly approached on-street as they are more likely to be present.

In addition, those visiting as part of a larger group are less likely to participate than those visiting alone or as a couple.

Residents questionnaires

The residents' survey has been designed to collect longitudinal data. Respondents interviewed in the before survey were re-contacted in the after phase to capture real changes in behaviour and perceptions. The use of a longitudinal panel approach enables us to directly measure 'real' changes in travel behaviour, attitudes, and town centre use (however small); rather than change based on comparison of observations pre and post implementation from different samples.

In both locations the survey was focused on residents living in the built-up urban areas surrounding each of the town centres (generally within 5kms in Telford and within 3kms in Redhill), who are most likely to change their travel behaviour as a result of investment in sustainable transport measures.

Random digit dialling was used to obtain a random sample of households who have a landline and are on the commercial supplier's directory purchased for the survey. The first birthday rule was used to randomly select a respondent within each household. If the identified respondent was not at home, at least three further calls were made in an attempt to speak to the individual concerned. No age or gender quotas were used, in accordance with the methodology agreed with the DfT. A £10 incentive was offered to those taking part in a follow up interview.

Target sample sizes for the before surveys were inflated to allow a one-third attrition rate. For Redhill, the target was split 50:50 between the Northern Corridor (higher exposure to LSTF measures) and Other Corridors (lower exposure to LSTF measures).

In both locations, the overall 'before' target was met, although the target split by corridor in Redhill was not fully met due to difficulties in securing sufficient interviews in a relatively small area.

However, the level of attrition was much higher than expected in both locations (59% of the original sample in Telford, and 62% in Redhill), due to a high number of refusals and 'numbers not recognised' / 'wrong numbers' amongst those agreeing to be re-contacted. This resulted in a smaller retained sample in each location than anticipated (241 in Telford and 335 in Redhill), but still sufficient to provide useful results. For example, a sample size of 300 in either the before or after sample ensures a maximum margin of error for a given proportion response rate of ±5.7% (at the 95% confidence level), when compared to the true population (see Text Box 1).

Table 2. Target and actual sample sizes (Residents questionnaires)

	Target	Actual
Telford – Before	590	593
Telford – After	400	242
Redhill – Before (Corridor split)	880 (50% Northern , 50% Other)	880 (39% Northern, 61% Other)
Redhill – After	600 (50% Northern , 50% Other)	336 (46% Northern , 54% Other)

Weighting approach

The before survey data has been weighted by age and gender (using census data for the relevant postcode areas) to account for under and over-representation of certain groups (termed **cross-sectional weights**). Large weightings have been applied to both the Redhill and Telford datasets to account for the under-representation of men aged under 40 in Telford and under 30 in Redhill, women under 30, and the over-representation of older age groups.

The after analysis involves comparing results for the retained sample of responses only, i.e. 242 respondants in Telford and 336 respondants in Redhill. Given the longitudinal nature of the data, the weightings used for the after analysis need to account for '**wave non-response**' resulting from loss of some of the wave 1 (before) respondents. The weights used are therefore based on a combination of:

- cross-sectional weights to account for under and over-representation of certain age-gender groups in the initial before sample; and

- non-response bias weights to account for loss of some of the before respondents during the after wave of surveys (calculated from identified socio-demographic and behavioural predictors of non-response).

A common approach is to develop a logistic regression model to calculate longitudinal non-response weights, where the non-response weight is the inverse of the estimated probability of response at the current wave. This approach uses potential predictors of non-response from the previous wave to predict response at the current wave. The predicted probabilities of responding based on the logistic regression model are then inverted to generate the longitudinal nonresponse weights at wave 2 (after survey). The overall weights at wave 2 are then the product of the wave 1 cross-sectional weights and the wave 2 longitudinal non-response weights. This approach is described in the following paper by the Centre for Longitudinal Studies, *J.W. McDonald and S.C. Ketende, Nonresponse Weight Adjustments Using Multiple Imputation for the UK Millennium Cohort Study, Working Paper 2010/6, Nov 2014 (Section 1.3).*

The step-by-step methodology is set out below:

Step 1: Calculation of cross-sectional weights for the before sample

- Cross-sectional age-gender weights have been calculated for all respondents who participated in the before survey, based on age and gender census data for the postcode areas covering Telford and Redhill. For 95.4% (Telford) and 94.7% (Redhill) of respondents the value for the cross sectional weighting variable is less than 2.

Step 2: Calculation of longitudinal non-response weights based on a comparison of the before and after sample characteristics

- To compute the non-response weights, non weighted data from the before sample has been used, with a dummy variable added indicating whether a respondent participated in the after survey (1) or not (0). Stepwise regression using backward elimination has then been used to select variables to build a regression model to predict the probability of wave 2 (after) participation for each respondent.

- Non-response weights have then been calculated for each respondent based on their probability of participating in the *after* survey, with adjustments applied to avoid large weights.

- The weights for individual respondents have then been divided by the median weight to avoid a change in the base size.

For both locations, the number of variables identified as predictors of non-response was limited, suggesting a low impact of non-response effect to the quality of the data, in general. However, the Telford data does include a substantial element of non-response bias amongst male residents in the after dataset (71% in the unweighted sample, compared with 48% when weighted for non-response), resulting in large longitudinal weights.

Step 3: Calculation of final combined (longitudinal) weights for the after sample respondents

The final weight (applied to respondents who participated in both the before and after waves) has been calculated by multiplying the non-response weights (Step 2) by the cross sectional weights (Step 1). For 94.2% of Telford respondents and 92.6% of Redhill respondents the value of the final weighting variable is less than 2.

For the purpose of analysis, the above weights have been applied to the datasets as follows:

Table 3. Application of weights to before and after datasets (Residents questionnaires)

	Before weights	After weights
Before analysis only (593 respondents in Telford, 880 respondents in Redhill)	Cross-sectional	-
After analysis only (242 respondents in Telford, 335 respondents in Redhill)	-	Final (longitudinal)
Before vs. After analysis (242 respondents in Telford, 335 respondents in Redhill)	Final (longitudinal)	Final (longitudinal)

Sensitivity analysis

To determine whether the analysis is stable, sensitivity analysis has been conducted to see what effect small changes in the weights have on the final results. This has involved changing the approach used in Step 2 to adjust the weights, dividing by the mean weight rather than the median weight. A comparison of results for both locations shows that there is no significant difference between the two sets of results.

Significance testing

Any changes reported (between the before and after surveys) represents a real change across the sample of respondents interviewed, weighted to be representative of the wider population.

Nevertheless, the panel of respondents do represent a sample of the population, and confidence intervals are still useful to understand how the overall response proportions compare to the true population. For

example, the margin of error associated with responses based on 242 respondents is ±3.78% for a 10% or 90% response, increasing to a maximum of ±6.3% for a 50% response (see Text Box 1). So, if 50% of the retained sample of residents describe access by bus as 'easy' in the before survey, then there is a 95% probability that the true percentage is somewhere between 43.7% and 56.3%.

If the sample response increases to 55% in the 'after' survey, then this represents a real change within the panel of residents of 5 percentage points. However, the confidence interval associated with this change is ±8.9%, suggesting that there is a 95% chance that the change could vary between -3.9% and 13.9% in the wider population, indicating that the change is not significant. In other words, the 5 percentage point change observed in the retained sample is not sufficiently large to indicate a significant change in the wider population.

2.3.2. Focus groups

Focus groups were undertaken in both the before and after phases to provide in-depth evidence to support the findings of the town centre user and residents surveys; with the topic guides focused around the same heading as those used for the questionnaires. The focus groups involvd a small number of participants and were not intended to be representative. The findings do not therefore carry the same weight as the questionnaires, but can help explain the issues behind the questionnaire results, and why questionnaire respondents have responded in certain ways. Each participant received a £35 voucher, on completion of the focus group.

Before phase – In April 2014, two sets of focus groups were undertaken with the following town centre users in each location:

- **Frequent users** – Those visiting the town centre 'at least once a week'.
- **Infrequent users** – Those visiting the town centre 'once a month or less' in Telford, and 'less than once a week in Redhill'.

Each group involved 8 members of the public, recruited via a bespoke exercise using telephone databases for the built-up urban areas surrounding each of the town centres (generally within 5kms in Telford and within 3kms in Redhill) – covering the same areas as the residents survey. Selection criteria were set for each focus group to ensure that participants represented a range of different 'user groups' in terms of frequent of visits to the town centre and main mode of transport; along with a mix by age and gender. For Redhill, the intention was to draw participants from the postcode areas to the north of Redhill Town Centre – where there has been more LSTF investment. However, this was difficult to achieve for the infrequent user group and it was necessary to draw half of the participants from the wider Redhill postcodes.

After phase – Post implementation focus groups were undertaken in November 2015 in Telford, and February 2016 in Redhill, with the following groups:

- **LSTF Supporters and Non-supporters** – Town Centre Survey respondents with more positive or more negative (rather than neutral) perceptions regarding the effectiveness of the recent transport investment, and those reporting a change in perceptions of accessibility or change in mode use[4]. All participants lived within the built-up urban areas surrounding each of the town centres.
- **Under 40s, at least 50% males** – Recruited independently, via conventional on-street / telephone approaches, to cover groups who were under-represented in the questionnaire response samples and the before focus groups. All participants lived within 3kms of the town centre; and covered a range of different mode users.

The target for recruitment was those living within postcodes RH1 1, RH1 2, and RH1 3 which represent areas located to the north of the town centre where there has been more LSTF investment. However, for both groups it proved difficult to achieve the quota based on this criteria and it was necessary to widen this to also include those living in an area to the south of the town centre, but still in close proximity to the town centre.

[4] In Redhill, recruitment proved challenging with a high number of refusals, non-responses despite repeated calls, and many who could not be contacted as they were either 'number not recognised' or 'no incoming calls. As a result, it was necessary to recruit some participants independently using conventional on-street / telephone approaches.

2.3.3. Retailer interviews

In-depth telephone interviews were undertaken with a cross-section of retailers in each town centre, during November and December 2015. Twenty interviews were undertaken in each location, with quotas were set on size of business, type of business and location.

The interviews included closed questions providing background context, followed by a short number of open questions exploring the role of the LSTF measures on the town centre economy, alongside questions about the relative influence of the wider economy and development activity in the area.

2.3.4. Stakeholder interviews

Face-to-face depth interviews were undertaken with the following key stakeholders in each location:

- LSTF Delivery Team
- Local Authority Economic Development Officers
- Shopping Centre Managers
- Local interest representatives (Local Town Clerks in Telford; Pedestrian Forum in Redhill)
- Key developers / trip attractors (Southwater Event Group in Telford).

Interviews were undertaken:

- before the main phase of implementation – to understand the drivers behind the scheme, the development and delivery process and the expected outcomes;
- at the end of the LSTF funding period (after) – to understand the extent to which the intended scheme has been delivered on the ground and why, to obtain early views on outcomes, and to identify changes in the external environment which may have impacted on the effectiveness of the scheme; and
- nine to twelve months post implementation (after) – to further explore the above issues.

2.3.5. Pedestrian and cycle video counts

Pedestrian and cycle video counts were undertaken on the approaches to each of the town centres, covering the following periods:

- 10th to 17th May 2014 – prior to the commencement of the main LSTF implementation; and
- 9th to 26th September 2015 – six months[5] after the completion of the majority of capital works in each location.

Both periods covered 5 weekdays and 2 Saturdays, with counts undertaken between 9am and 6pm to capture those visiting the town centres for retail, service or leisure purposes. The count sites were chosen to monitor those accessing town centre destinations on foot or cycle, using routes affected by LSTF measures.

2.3.6. Secondary data

The above data sources have been supplemented with secondary data from the Outcome Monitoring Reports[6] prepared by each of the local authorities, and data provided by the above stakeholders.

2.3.7. Role of the various evidence sources

The role of the above evidence sources in addressing the research questions and evaluation themes, is shown in Table 4.

[5] Due to timescale constraints on DfT funding availability for this study, it was necessary to undertake the 'before' and 'after' surveys at different times of the year. May and September are considered to be a broadly comparable months, and any seasonal (or weather) effects are expected to be minimal.

[6] All large LSTF project teams were expected to develop and deliver bespoke monitoring programmes to track changes in key outcome metrics influencing economic growth and carbon. Typical metrics include mode shift, increased bus reliability and patronage, increased number of cyclists and cycle trips, vehicle flow, and change in carbon emissions.

Table 4. Use of data sources to address priority research questions and evaluation themes

	Town centre user survey	Residents' panel survey	Focus groups	Town centre retail business survey	Stakeholder interviews	Pedestrian and cycle counts	Secondary data sources	Contextual (external environment) analysis	Corridor-based analysis (Redhill only)
Evaluation themes									
Effectiveness of specific measures, in influencing choices local residents make about where to shop and access services, and mode of travel	✓	✓	✓	✓	✓				✓
Extent to which observed outcomes can be attributed to LSTF investment.	✓	✓	✓	✓	✓		✓	✓	✓
What works, why, for whom, and in what context?	✓	✓	✓	✓	✓			✓	✓
Transferability							✓	✓	
Key research questions									
1a. Has the perception of town centre accessibility improved?	✓	✓	✓	✓	✓				✓
1b. Do town centre users perceive that the LSTF measures have increased the attractiveness of walking and cycling into the town?	✓	✓	✓	✓	✓				✓
2a. What modal shift, away from the car, has been generated in town centres as a result of the LSTF programme?	✓	✓	✓		✓	✓	✓		✓
2b. Has the number of people walking and cycling into the town increased?	✓	✓		✓*	✓*	✓			✓
2b. If so, on what days and during what time of the day has the change occurred?						✓			
3a. Have changes in transport perceptions resulted in town centre users changing where they choose to shop and access services?	✓	✓	✓	✓	✓				✓
3b. What impact has the use of sustainable modes had on the dwell time of those visiting the town centre?	✓	✓	✓	✓	✓				✓
4a. What positive economic impacts have LSTF measures had on town centre activities and businesses? Has retail business confidence increased, helping to retain or attract businesses?				✓	✓		✓		
4a. Has town centre footfall increased?				✓*	✓*	✓	✓		

**Perception-based or anecdotal evidence.*

2.4. Data issues and limitations

The following section summarises the key data issues and limitations which need to be considered when interpreting and analysing the various data sources.

- **Comparability of town centre user and residents survey results** – While the two surveys were designed to complement each other, with significant overlap in design, the results are not directly comparable. The following differences should be taken into account when comparing results

  - The residents survey captures evidence from those living in the immediate urban area, the target market for LSTF investment, while the town centre user survey includes evidence from those living further afield (often beyond walking or cycling distance).

  - In both cases, the LSTF investment is part of a package of measures to increase the attractiveness of the town centre. The residents survey is therefore intended to capture the views and behaviour of those who do not visit the town centres concerned on a regular basis. In Telford, the residents (retained) sample includes a higher proportion of less frequent visitors than the town centre user sample, although the same is not true for Redhill:

    - less than once a month in Telford (residents 20%, town centre users 13%, before survey);
    - less than once a week in Redhill (residents 6%, town centre users 7%, before survey).

    However, the differences between the two datasets are not as great as expected, suggesting a high level of use of both town centres amongst residents in both locations.

- **Measuring change in perceptions and behaviour** – A further difference between the two surveys lies in the manner in which they measure change:

  - For the town centre users, change in perceptions and behaviour is based on comparison of responses from two separate samples of respondents with different sample characteristics (see Chapter 6.3 and 13.3), which may influence the observed level of change.

  - For residents, the responses are provided by the same set of respondents, so any changes reported (between the before and after surveys) represent a real change in behaviour, weighted to be representative of the wider population. However, the questions were asked at different points of time, and the robustness of the results relies on respondents answering in a consistent and accurate manner.

  In both surveys, respondents were also asked to state on how they perceived their attitudes and behaviour to have changed in the last year or so. These results are based on self-reported change amongst one set of respondents, rather than a comparison of two datasets from different points in time and (in the case of the town centre users) from different samples of respondents. The results are therefore potentially more reliable, but depend on the accuracy with which respondents are able to recall previous attitudes and behavoiur.

- **Increase in 'don't know' responses in the after survey** – In both the town centre user and residents surveys, the proportion of 'don't know' responses increased substantially for a number of questions. The reasons for this are unclear. However, in both cases (but particularly the residents survey) it proved challenging to achieve the target sample sizes for the 'after' period, despite both surveys using the same methodology for both waves. It may be that respondents simply said 'don't know' to get through the interview quickly. The implications in terms of drawing robust conclusions are addressed in the relevant sections of this report.

- **Policy response bias** – Policy response bias is a type of cognitive bias which can affect the results of a statistical survey if respondents answer questions in one of two ways. The respondent might answer questions in the way they think the questioner wants them to answer rather than according to their true beliefs. The second type of policy response bias relates to circumstances where a respondent has a vested interest in the outcome of a study and hence may try to influence the survey results by modifying the answers they provide. The risk of policy response bias in this study, however, is considered to have been limited by framing questions in a neutral manner, by providing only limited background information about the purpose of the questionnaire (although respondents are informed that survey is to inform

research for the Department for Transport); and by leaving questions which refer to specific LSTF initiatives to the end of the questionnaires.

- **Number of cyclists** – The number of cycle respondents in the town centre and residents samples is very low for both Telford and Redhill. Any focused analysis on the views, experiences and behaviour of this particular group needs to be treated as indicative only.

- **Construction impacts (Telford)** – At the time of the before questionnaire surveys, focus groups and video counts in Telford (March to May 2014), construction works on the Box Road Scheme had begun. Both Forge and Malinslee Roundabouts had been largely completed; work was underway on Malinsgate and St Quentins Gate Roundabouts; and traffic management was in place around sections of the Box Road with some lanes closed and traffic delays evident. Feedback from the focus group participants illustrates the level of disruption caused and the response amongst some members of the public:

  "it's an absolute nightmare at the moment" (frequent user, female, 17-29)

  The Shopping Centre Manager reported (April 2014) that shoppers had complained about the traffic management measures and roadworks.

  In addition, the cycle path on the south side of Coach Central was also closed to allow the works to take place; and there was no footway at all on the north side of Coach Central. This resulted in the cancellation of planned pedestrian and cycle video counts at this location. Cycle and foot paths elsewhere around the Box Road were largely unaffected during the baseline data collection period.

- **Construction impacts (Redhill)** – At the time of the before surveys in Redhill (March to May 2014), works had begun on the Balanced Network Scheme (funded through the Local Pinch Point Fund, with LSTF investment enhancing the quality and providing added value). The scheme comprised 15 minor works which were implemented in piecemeal approach on the ring road. Some crossings were closed for short periods (during the before surveys), disruption to traffic and cyclists / pedestrians was felt to be minimal.

Part B –
Telford Case Study

3. Introduction

3.1. Introduction

This section sets out the evaluation evidence for the Telford Case Study. It is structured around the Theory of Change Framework, described in Chapter 2 and summarised below.

The initial chapters set out:

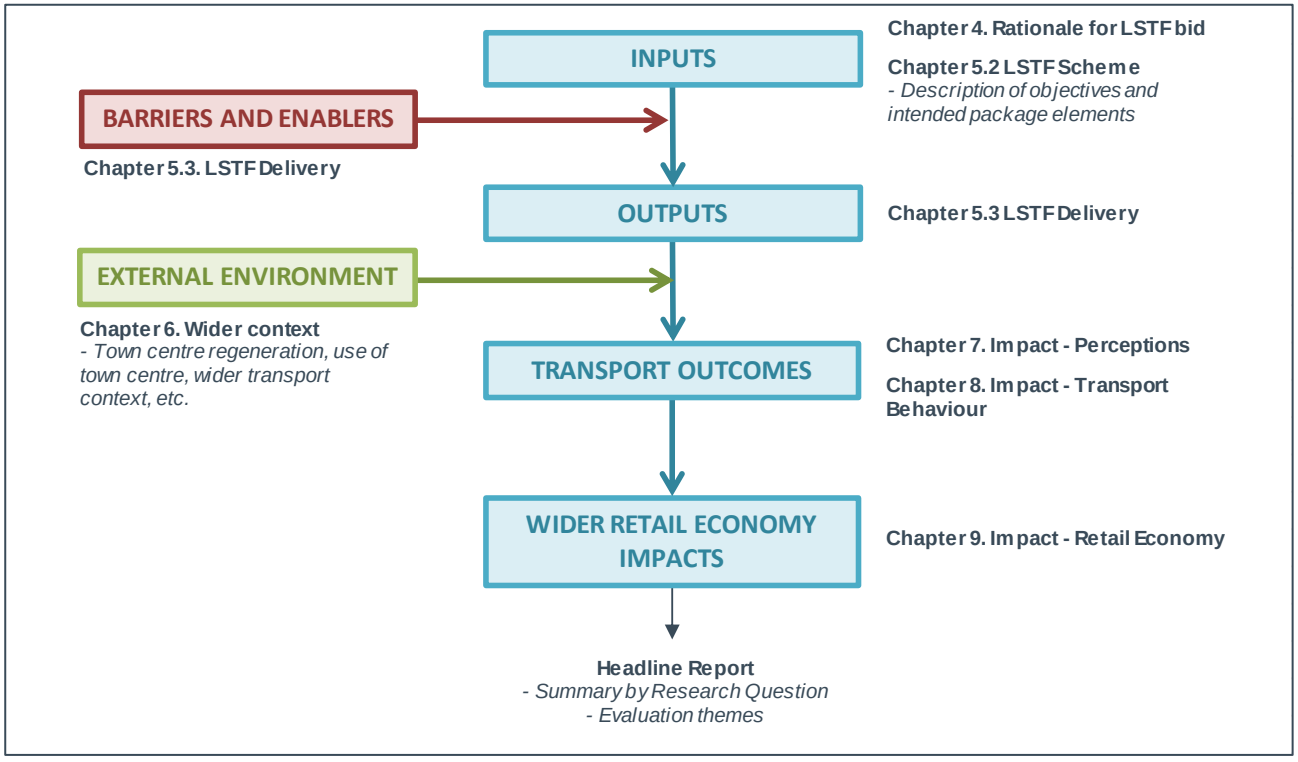
- the background and rationale for the LSTF package, and a description of the LSTF objectives and package elements – i.e. the **Inputs** to the process;
- the extent to which the LSTF package has been delivered to time, budget and quality – i.e. the **Outputs**; along with any **Barriers and Enablers** affecting delivery which may impact on anticipated outcomes;
- the potential role of the **External Environment** in enhancing or constraining the delivery of change on the ground, focusing on town centre regeneration, changes in the profile of town centre visitors and use of the town centre during the research period, the wider transport context, and other contextual factors.

The following chapters then present the evaluation evidence relating to the key **Transport Outcomes (Perceptions and Behaviour)** and **Retail Economy Impacts**, covering:

- perceptions regarding accessibility and the effectiveness of specific sustainable transport initiatives;
- the impact of LSTF investment on travel behaviour and walking and cycling activity within the town centre; and
- the impact of LSTF investment on the retail economy and the attractiveness of the town centre as a destination.

Conclusions relating to each of the research questions are then presented in the Headline Report.

Figure 2. Structure of Telford evidence around Theory of Change framework



4. Rationale for LSTF bid

4.1. Introduction

This chapter sets out the original rationale for the LSTF bid, providing a description of the scheme area, and a summary of transport and regeneration context.

4.2. Description of scheme area

Telford is an important sub-regional centre within the West Midlands. It was developed as a 'new town' in the 1960s and 70s, and the associated car-orientated philosophy strongly influenced the towns' travel culture and transport infrastructure.

The focus of activity in the town centre is the Telford Shopping Centre, an indoor shopping mall with 92,000 sq.m retail floorspace and home to 160 'high street' outlets. It is located on a strongly defined square of land, surrounded by surface car parking and, until recently, a three lane busy one way inner ring road known as the 'Box Road' (comprising Coach Central, Grange Central, Lawn Central, Woodhouse Central – see Figure 3). The 'Box Road' forms a major through route and provides direct access to the town centre for parking and servicing.

Surrounding the existing shopping area, and outside the 'Box Road' are areas of different uses / character:

- The Southwater area lies to the south west of the shopping area and provides a significant opportunity to regenerate the Town Centre and expand the area of activity outwards. Phase 1 was completed in October 2014 and represents a significant expansion to the town centre offering, comprising a range of leisure and community facilities.
- The Telford International Conference Centre, to the west of the Southwater area, is one of the largest conference centres in the country, and has recently undergone significant expansion. However, the lack of evening facilities, and poor links between the rail station and the Town Centre, are seen as major weaknesses.
- The Telford Town Park, a 400 acre major leisure attraction, lies to the south of the shopping area. It has benefitted from significant investment in recent years with new facilities such as a new Visitors Centre, a high ropes course, crazy golf, and creation of an outdoor arena area for concerts and major events.
- The area to the west of the shopping area, the Civic Quarter, contains most of the town's main civic functions including law courts, a police station, and multi-screen cinema.
- The area to the immediate north, Telford Gateway, is primarily composed of office development, Telford Central railway station and major highway interchanges on the M54, A5 and A442. Whilst it is possible to walk from this area to the shopping centre, the route was poorly defined and in need of maintenance.

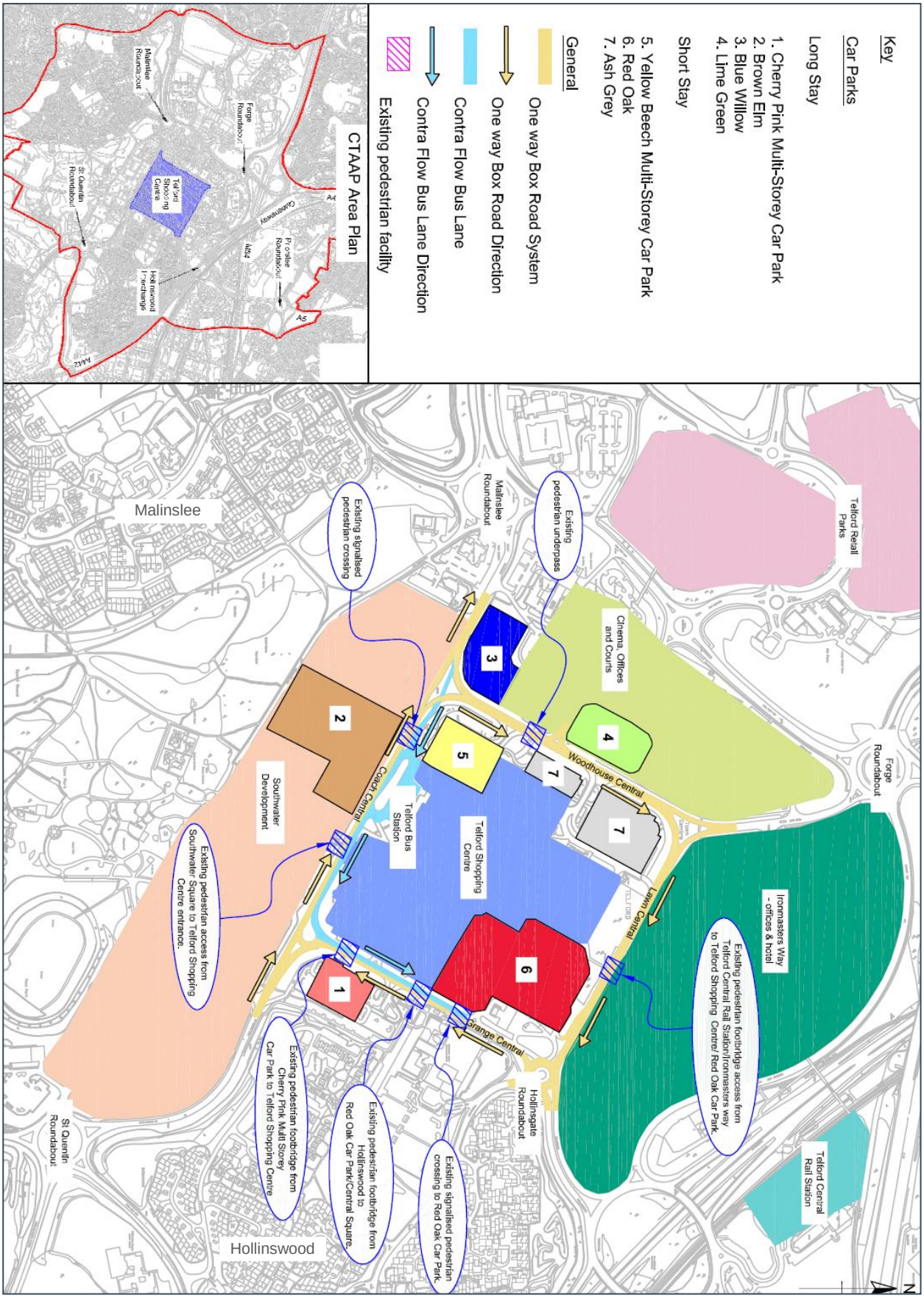
The majority of the land surrounding the Shopping Centre, within the Box Road, comprises extensive areas of surface parking. The bus station is also located within the Box Road, on Coach Central. There is no housing, and limited leisure and office use within the Box Road.

4.3. Problems and issues

Prior to the recent LSTF investment, the town centre suffered from a **road dominated environment**, which deterred walking and cycling. In particular, the Box Road had three distinct detrimental impacts:

- It promoted high vehicle speeds that created a dangerous environment for pedestrians and cyclists. The speed was limited to 30mph but often exceeded 40mph in practice.
- It was wide and was designed and built with extensive land take. The existing footpaths and cycleways were separated from the road by wide verges and were often screened by vegetation. This promoted a 'racetrack' environment, and many foot / cycle routes were considered unsafe in the evenings.
- It encircled and segregated the Telford Shopping Centre area from the rest of the town centre, acting as a barrier to the free and safe movement of pedestrians and cyclists.

Figure 3. Telford town centre – Pre-LSTF highway and transport network



Telford LSTF Large Project Bid – Business Case

In addition, the town centre suffered from:

- a segregated town centre with limited mixing of uses and activities inside and outside of the Box Road;
- a townscape lacking in distinctiveness, and without a social and cultural heart – the Shopping Centre is single storey with an unattractive skyline'; and,
- a weak evening economy due to a lack of restaurants and bars either inside or outside the Box Road, which in turn limited the scope for late night shopping.

Little new development had taken place since the mid-1990s. The Box Road (and particularly Coach Central) carried high volumes of through traffic; and in its existing form was at capacity, limiting the amount of development that could be supported in the town centre. Forecasting undertaken for CTAAP predicted that if the planned level of development was allowed to occur without significant highway improvements to the Box Road, Forge and Malinslee Roundabouts, and the wider network, Central Telford would become grid-locked during the peak periods, with specific problems occurring at Forge and Malinslee Roundabouts. This problem was exacerbated by two main factors:

- The one-way system required drivers to make lengthy detours around the main shopping area, resulting in congestion and emissions.
- There is no direct link between the M54 and other major routes including the A442 and A5, therefore traffic travelling between these routes passes through the Box Road.

In addition, severance caused by the Box Road constrained connectivity and permeability between the Telford Shopping Centre and adjacent areas, preventing sustainable expansion of the centre (in terms of mode of travel and integration of new developments into the existing town centre). In particular, the poor environment restricted cross-town pedestrian movements in the evening, as pedestrians are forced to use the Box Road once the shopping centre closes (at 6pm on weekdays and Saturdays, 8pm on Thursdays and 4:30pm on Sundays).

Despite providing a successful modern shopping experience, with a good range of high street chains (anchored by House of Fraser and Debenhams), the town was at risk of losing its sub-regional importance, particularly as an employment centre for the growing local population. Results from the town centre user *before* survey showed that Telford was perceived to perform poorly against the most commonly visited competing centres in terms of quality of the town centre environment, the type and range of leisure and eating facilities.

Adjacent to the town centre are the residential areas of Hollinswood and Malinslee, both built in the early years of the New Town. Both areas are characterised by high unemployment and pockets of social deprivation. Despite the close proximity of these areas, surveys in May 2009 indicated that only 4% of visitors accessing the shopping centre did so on foot or by bike, due to the poor quality of the pedestrian / cycle routes and the severance effect of the Box Road.

4.4. Central Telford Area Action Plan

A key driver behind the LSTF bid was the Central Telford Area Action Plan (CTAAP), 2011-2016. It sets out the vision and policies which aim to guide the evolution of Central Telford, from a predominantly retail centre to a place that meets the town's growing status and needs. It looks to encourage mixed use development in the town centre and improve the integration of the town centre with the adjoining areas, thus reducing the reliance on the private car. A total of 4414 new jobs are expected to be created.

Key elements of the strategy are set out below:

- Identifying the broad locations for around 2,500 homes, 110,000 sq.m office floorspace and 65,000 sq.m comparison retail floorspace.
- Linking and integrating the physical structure of the town centre with areas adjoining the shopping centre, redevelop the Southwater area with a mixture of uses, and create a new focal point for the town.
- Creating a sense of place with high quality designs, a mixture of building heights and styles and improved public realm.
- Encouraging mixed use development and introducing residential uses into the Town Centre.
- Reducing reliance on the private car, managing vehicle circulation within the Town Centre and improving access to and links between the different types of transport **(the core focus of the LSTF bid)**.

- Regenerating Hollinswood and Malinslee and improving linkages between these areas and the Town Centre.

The aim is to create a vibrant, multi-functional town centre, with a strong evening economy, good links between the various town centre destinations and functions, which is not constrained by the current highway infrastructure and is able to support current and future development.

5. LSTF Scheme and Delivery

5.1. Introduction

This chapter provides a description of the intended LSTF package (at bidding stage); and then examines the extent to which it was delivered as planned, and what key barriers, enablers and challenges affected delivery. The final section outlines the extent on disruption during the delivery phase, which may impact on outcomes.

5.2. Description of intended LSTF package

In 2011, Telford & Wrekin Council was successful in securing funding for two complementary LSTF packages:

- Telford Town Centre Transport Scheme (the Box Road Scheme) – A Large Project which aimed to remove the barrier to expansion in the existing town centre.
- A Key Component Package of supporting sustainable transport measures, which was intended to target the largest trip generators within Central Telford.

The above packages were part of a range of transport measures to support the sustainable regeneration of the town centre and facilitate the delivery of the CTAAP. Other measures included:

- Highway improvements to the wider network to remove through traffic from the Town Centre.
- Adoption of maximum car parking standards for new development in the Town Centre (to below those set out in PPG13 at the time the CTAAP was developed[7]), and adoption of minimum cycle parking standards.
- Improved pedestrian and cycle links between the Box Road and the adjacent housing areas of Malinslee and Hollinswood, the adjacent office and civic areas to the north and east, and the railway station – *Some funding included in the Key Components Package (Telford Central Interchange, Silkin Way Multi User Route).*

A logic map showing the transport outcomes and wider impacts which the LSTF package and wider interventions are expected to deliver, along with the expected causal pathways, is presented in Figure 4.

5.2.1. Telford Town Centre Transport Scheme ('Box Road Scheme')

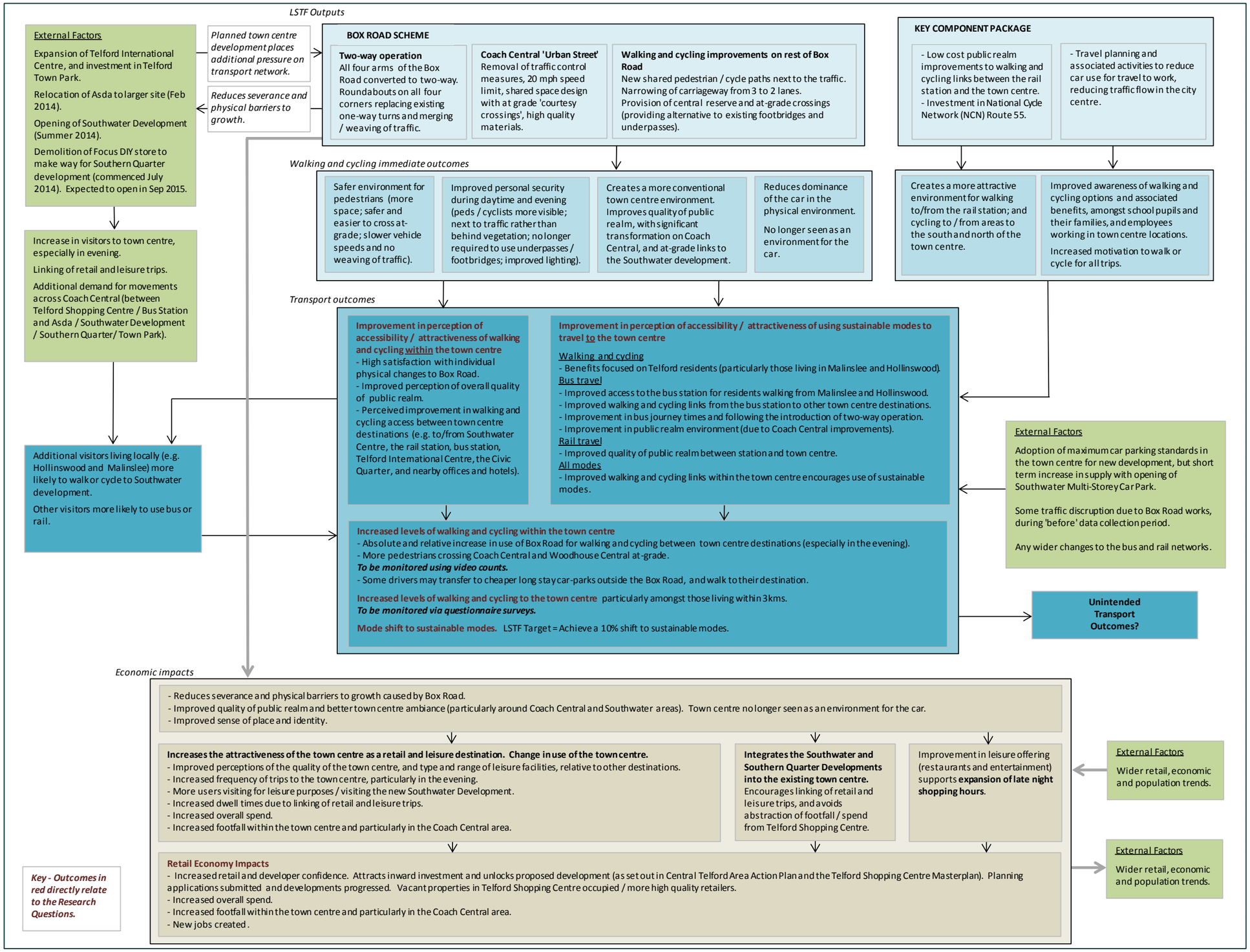
The bid proposed physical measures to upgrade and transform the quality of the Box Road public realm environment, and create a more conventional town centre environment.

Objectives and intended outcomes (as set out in bid)

- To contribute to the sustainable development and regeneration of the Telford Town Centre area by helping to address the current market failure relating to the lack of inward investment, leading to job creation in the retail, commercial and professional services and business tourism / conferencing sectors.
- To improve the physical environment by transforming existing highway land into a vibrant community space.
- To improve accessibility to and from the town centre by removing physical barriers to growth and starting the process of reshaping the urban form of Telford to create a 'heart' to the town and a sustainable night time economy.
- To reduce the dominance of the car through a shift to sustainable modes.
- To improve community cohesion across the borough by improving access to the town centre from a number of deprived residential areas.

[7] Planning Policy Guidance Note 13 (PPG13) no longer exists. There are no maximum parking standards set in the National Planning Policy Framework (NPPF) which replaced PPG13 in 2013.

Figure 4. Telford LSTF Package (and wider interventions) – Detailed logic map focused around research objectives



The modelling and assessments undertaken as part of the business case identified that the large project would deliver:

- 1,342 jobs through new developments;
- reduce CO_2 emissions by 3,116 tonnes;
- improve road safety conditions particularly for pedestrians and cyclists;
- provide a 10% modal shift to sustainable modes of transport (by making the Box Road area more accessible for pedestrians and cyclists, and through the Key Component Package)[8].

Scheme description (as set out in bid)

The original LSTF scheme comprised the following elements:

(i) Making all four arms of Telford's 'box road' two-way for traffic

Changing from one-way to two-way operation was intended to create more efficient vehicle circulation, improve access to the town centre, encourage slower speeds, and improve safety. To facilitate two way operation, roundabouts were to be added on all corners (except at Holinsgate where there was already a roundabout). The new roundabouts replace one-way turns and merging of traffic from different directions, creating additional capacity and a safer environment for vehicles and pedestrians - traffic no longer required to merge or weave across three lanes. Exits / entrances to car parks within the Box Road to be upgraded to improve traffic flow. Two-way operation also increases the potential for bus stops to be located on the Box Road (in addition to those at the current bus station on Coach Central).

(ii) Introduction of an 'Urban Street' on Coach Central

Coach Central to become a two-way 'urban street' catering for pedestrian, cycle, and vehicle uses. The proposals involved removing traffic control measures, introducing a 20mph speed limit, and using shared space design principles to provide 'courtesy crossings' at grade (see Figure 5).

Figure 5. Proposed transformation of Coach Central

The improved street was intended to help create a more traditional town centre environment and allow better links between Telford Shopping Centre and Southwater, the Town Park, and beyond via the Silkin Way Multi User Route. This helps mitigate against the potential for the Southwater Development (and the adjacent Southern Quarter Development) to become discrete destinations drawing trade and spend away from the Telford Shopping Centre.

[8] The 10% mode shift target was based on benchmarking evidence from the Sustainable Travel Demonstration Towns, and other relevant initiatives. In addition, surveys undertaken as part of the development of the Telford Strategic Transport Model confirmed the considerable scope for mode transfer in Telford, with over half the car trips in the AM peak hour less than 10km in length and 22% less than 5km. The TSTM was then used to assess the implications of a 10% modal shift in terms of the baseline data.

(iii) Creating a safe and attractive walking and cycling environment on Woodhouse Central, Lawn Central and Grange Central

Woodhouse Central, Lawn Central and Grange Central to become 'urban streets' catering for all mode users:

- Highway capacity to be reduced from three lanes (one-way operation) to two narrow lanes (two-way operation).
- Central reserves to be provided to make it easier to cross.
- At grade crossings to be provided to encourage pedestrians to cross at-grade, rather than using underpasses or over-bridges. This was intended to deliver safety and personal security benefits, but was also designed to create a more conventional town centre environment.
- Shared cycle/pedestrian facilities to be provided around the outside of the Box Road, adjacent to traffic. Locating the pathways next to the highway was intended to create a more conventional town centre environment, remind drivers that slower speeds are more appropriate in a town centre environment, and make walking and cycling more visible. The facilities are intended to improve links between Telford Shopping Centre and nearby office, civic and residential areas, and beyond; and improve the environment for cross-town movements in the evening when the Telford Shopping Centre is closed.
- Footways to be provided around the inside of the Box Road.

(iv) Highway capacity improvements to the wider network

Improvements to Forge and Malinslee Roundabouts to remove through traffic from the Town Centre by promoting an alternative route via the A5 Rampart Way and B5027 Hall Park Way.

Budget

The initial bid was for £8.8 million (predominantly capital funding) from the DfT, supported by £3.0 million local contribution (from local developers), totalling £11.8 million. The amount awarded by the DfT was £6.1 million. Highway capacity improvements to the wider network (Forge Roundabout and Malinslee Roundabout) were not funded by the Department for Transport as part of the LSTF award, but were subsequently funded via the Highways Agency and Department for Transport Pinch Point programmes.

Intended delivery programme

Delivery of the Box Road Scheme commenced in December 2013, with completion expected in March 2015.

5.2.2. Key Component Package

The Key Component Package was intended to disperse and channel the benefits of the economic growth in the town centre throughout the rest of the local community by improving sustainable transport linkages, particularly to socially deprived areas.

Objectives and intended outcomes (as set out in bid)

- Create a pleasant, safe and secure environment for non-motorised users, removing transport barriers created through New Town spatial planning.
- Achieve a 10% shift to sustainable modes such as walking, cycling and public transport.
- Stimulate and support economic growth through improving sustainable transport access to Telford town centre, key tourist destinations and employment sites, reducing Telford's dependency on public sector employment.
- Reduce transport as a barrier for 'hard to fill' job vacancies in manufacturing and service sectors.
- Improve access to key employment and tourist sites, and key traffic generators such as schools by sustainable modes.
- Reduce congestion and improve journey time reliability to attract new investment.

Scheme description (as set out in bid)

The original LSTF scheme comprised the following elements:

i) Telford Central Interchange

As part of the National Stations Improvement Programme, a £0.8million package of improvements to the rail station was delivered between April 2011 and February 2013. The upgrade included: redecoration of the booking hall and concourse area; extension of the platform canopy on platform 1; improvements to the approaches to the station building; and new Totem and Facade panels.

The LSTF funding was intended to enhance the 600 metre walking and cycling links from Telford Central station to the town centre; involving improved signing and other low cost improvements (paving, landscaping, etc.), supported by targeted marketing and promotion of associated walking and cycling routes such as NCN55.

ii) Silkin Way Multi-User Route

The Silkin Way is a 14 mile off-road cycle route, part of NCN55, running the length of Telford and passing significant attractors of car trips including borough town centres, industrial estates, Telford Central rail station, the Ironbridge Gorge World Heritage site (WHS) and Telford Town Park. Funding was identified for a complete upgrade of the 7 mile section linking Telford town centre (at the Southwater development and Town Park) to the WHS, improved cycle links into the adjacent residential areas, and a Cycle Hub in the Town Park.

iii) Telford-Newport-Stafford NCN55 Route

The NCN55 links Telford and Stafford via the historic market town of Newport. Proposals included introducing cycleways, crossings and signing infrastructure between Telford town centre and the borough boundary at Newport to connect with the route in Staffordshire and provide safe facilities for leisure and cycle to work journeys.

iv) Gorge Connect Park & Ride

The provision of a £1.4 million park and ride site on the Ironbridge bypass, to improve access to Ironbridge Gorge World Heritage Site (WHS) for tourists. *Limited relevance in the context of this research.*

v) Low Carbon Life Skills

An initiative to provide children with 'low carbon life skills' including pedestrian training, bikeability cycle training, road safety and sustainable travel skills for the transition from primary to secondary education. The project was intended to focus on refreshing School Travel Plans, create safer routes to school, and support initiatives such as Walking Buses; with funding also identified to provide training for adults.

vi) Area Travel Plan

Funding identified to establish a Travel Plan Co-ordinator to target the largest trip generators within three industrial estates, tourist destinations, the central Telford area and market towns. Area Travel Plans to be developed that promote low carbon, low cost transport options, collectively and collaboratively across multiple employers – through improved information, closer working with public transport operators and better infrastructure. The intended outcome was fewer vehicles at peak periods and better access by low cost, low carbon modes to employment centres. The town centre forum was intended to focus on businesses located in the new Southwater development.

vii) Personalised Journey Planning

The polycentric layout of Telford, with segregated employment/residential zones and its large rural hinterland (73%) pose significant barriers to many residents seeking employment. Many job seekers are discouraged by the lack of access to private motorised transport and conventional public transport. This project aimed to work with businesses (large and SME), training establishments, and local employment agencies to develop bespoke solutions (including Wheels 2 Work and car share) enabling people to access employment opportunities. *Most of the investment was intended to be directed at organisations outside the town centre.*

Budget

The initial bid was for £1.4 million capital and £2.3 million revenue funding from the DfT, supported by £3.4 million local contribution (from NHS, Veolia, Network Rail and the Council's own resources), totalling £7.1 million. The amount awarded by the DfT was £3.5 million.

5.3. LSTF delivery (Outputs, Barriers and Enablers)

5.3.1. Actual delivery

The **Box Road Scheme** was largely delivered as intended, in terms of scope, programme and spend (see Table 5).

Table 5. Summary of LSTF Delivery – Box Road Scheme

Proposed Package	Summary of Actual Delivery
(i) Making all four arms of Telford's 'box road' two-way for traffic	**Implemented as planned.** Two-way operation began 3rd April 2015. This followed a successful trial when Woodhouse and Lawn Central were turned two way for seven weeks to help with traffic flows over the Christmas period.
(ii) Introduction of an 'Urban Street' on Coach Central	**Delivery exceeded expectations.** During the detailed design stage Members and officers favoured provision of a straight path for vehicles rather than a sinuous route, and use of low kerbs (significantly less than conventional design standards) to provide some form of vertical delineation between pedestrian / cycling areas and vehicle routes rather than a uniform level surface. During the implementation phase, a decision was to made to introduce a zebra crossing, rather than courtesy crossing. Given the uncertainty of the extent to which traffic levels along Coach Central would reduce in the short term, it was felt sensible to provide pedestrians with a form of crossing facility that they were familiar with in at least one location. *This has potentially had a small negative affect on the shared use concept, with drivers viewing the presence of the zebra crossing as a recognised crossing point and potentially less willing to give way on the rest of Coach Central.* Following the submission of the original bid, the Council secured an additional £1.1 million of funding from the EU to upgrade the shared space design on Coach Central, enabling higher quality materials to be used. Coach Central has been renamed Northfield Street, to emphasis the changing nature of the environment.
(iii) Creating a safe and attractive walking and cycling environment on Woodhouse Central, Lawn Central and Grange Central	**Implemented broadly as planned.** The original plans included provision of a footway / cycleway around the entire inside the Box Road (as well as the outside). This element has not yet been delivered due to uncertainty surrounding proposals for the development of the Telford Shopping Centre.
(iv) Highway capacity improvements to the wider network (Forge and Malinslee Roundabouts).	**LSTF funding not received, but delivered using other funding sources** These elements were not funded by the Department for Transport as part of the LSTF award, but were subsequently funded via the Highways Agency and Department for Transport Pinch Point programmes. Works to improve capacity were undertaken at Forge Roundabout (Oct 2013 to Mar 2014; £2.2 million) and Malinslee Roundabout (Oct 2013 to Apr 2014; £1.6 million).

Key:

	Delivery exceeded expectations.		***Implemented broadly as planned.***		***Some key elements not delivered or changed.***		***Largely undelivered.***

Highway capacity improvements to the wider network were not funded by the Department for Transport as part of the LSTF award, but were subsequently funded via the Highways Agency and Department for Transport Pinch Point programmes. This provides the opportunity to make Coach Central bus only in the future.

All local contributions were secured, as intended. In addition, the Council also secured an additional £0.75

million of funding from the European Regional Development Fund to upgrade the shared space design on Coach Central, enabling higher quality materials to be used.

The **Key Components Package** was also largely delivered as intended, in terms of scope, programme and spend (see Table 6). Only one element, Area Travel Plans required a fundamental change of approach, when the initial approach was found not to be effective. The Council delivered more than expected through the Low Carbon Life Skills element.

Table 6. Summary of LSTF Delivery – Key Components Package

Proposed LSTF Package	Summary of Actual Delivery
i) Telford Central Interchange	**Implemented broadly as planned.** The National Station Improvement Scheme was completed in February 2013. The 600 metre walking and cycling link between the rail station and the town centre has been upgraded with new paving, crossing facilities, and landscaping. New signing will be provided as part of the Town Centre Wayfinding Strategy which is being developed.
ii) Silkin Way Multi-User Route	**Implemented broadly as planned.** The majority of works on the Silkin Way Multi-User Route were completed by March 2014. The existing route was widened and resurfaced along the entire 7 mile stretch, links and signs into the Town Park from adjacent neighbourhoods (e.g. Malinslee, Randlay, and Stirchley) have been improved, and signage and access to Ironbridge WHS has also been upgraded. The Cycle Hub in the Town Park opened in 2013.
iii) Telford-Newport-Stafford NCN55 Route	**Implemented broadly as planned.** New shared cycleway provided along A518 between Newport and eastern edge of Telford. The scheme provides a shorter, more direct off-road route between Telford and Stafford. The previous route promoted for cyclists involved use of rural roads, required cyclists to cross the busy A41, and involved a lengthy detour of approximately 5 miles. *Note - The scheme is aimed at improving cycle access between Telford, Newport and Stafford generally, rather than specifically promoting cycling to Telford Town Centre. Limited relevance to this study.*
iv) Gorge Connect Park & Ride	**Implemented broadly as planned.** Completed in June 2012. The 250 space park & ride site offers buses every 12 minutes to the World Heritage Site. The cost is £1 per adult. *Note - Limited relevance to this study.*
v) Low Carbon Life Skills	**Delivery exceeded expectations.** Early on in the programme a Travel Telford brand was developed, providing a common theme for promoting all travel behaviour initiatives. In addition, all 54 primary schools in the Borough received an updated Travel Plan. Workshops were held in schools to promote sustainable travel benefits to children, and walking bus initiatives and pedestrian training were offered where needed. The approach subsequently developed into a Travel Telford School Network. Schools signing up to be part of the network receive four free assemblies per year, and a diagnostics workshop to help identify how best to promote sustainable travel. Through the capital element of the programme, lots of schools have received free cycle parking stands/shelters. Most primary schools in the Borough have received some initiative (other than an updated School Travel Plan). The Telford Walking and Cycling Map has also been revamped.
vi) Area Travel Plan	**Approach changed following early experiences** A Travel Plan Co-ordinator was appointed at the start of the LSTF period to develop six Area-based Travel Plans. Travel Plans were agreed with developers, but new occupiers did not feel obliged to implement the travel plan or provide monitoring data. A more flexible approach was therefore required. A Travel Telford Business Network was thus set up for all businesses in the Borough. Businesses sign up to a commitment to promote sustainable travel, and in return receive access to various travel behaviour tools (e.g. car-share database, Br Bike, sustainable travel information, wheels 2 work, and free cycle parking stands / shelters). Through this

		approach, the Council has worked with a number of businesses in the Southwater Development, and other town centre businesses. T&W Council have also developed and are implementing their own Staff Travel Plan. However, particular successes have focused on Cap Gemini which has 3000+ employees on a site a mile east of the town centre; and Telford and the Princess Royal Hospital, 3 miles north of of the town centre.
vii) Personalised Journey Planning		**Implemented broadly as planned.** Two key elements to programme: a car share tool / database, and a 'wheels 2 work' programme. The Council works with individuals where transport is a barrier to accessing jobs (existing or potential jobs), through engagement with businesses across the borough and Job Centre Plus. Opportunities for car sharing and using public transport are first explored. If this is not appropriate individuals are offered the loan of a bike and cycle coaching; and for longer trips, the loan of an electric bike or moped. Most of the investment has been targeted outside the town centre, buy some employers, such as the Southwater Events Group and the Holiday Inn have benefited. In addition, a Travel Plan Co-ordinator for the hospital has also been funded *(less relevant to this study)*.

Key:

	Delivery exceeded expectations.		***Implemented broadly as planned.***		***Some key elements not delivered or changed.***		***Largely undelivered.***

Total spend across the two packages was £15.7 million, comprising £9.6 million LSTF funding, £2.2m of Highways Agency Pinch Point Funding, £1.1m of DfT Local Pinch Point Funding, £750k of ERDF funding, and £2m of local contributions including Council and developer funding and £5.5m local contribution (LSTF Outcome Monitoring Report).

Appendix B presents before and after photos for the Box Road Scheme and capital elements of the Key Components Package, illustrating the changes which the LSTF programme has delivered on the ground.

5.3.2. Delivery barriers, enablers and challenges

Barriers, enablers and challenges identified by Telford & Wrekin Council (and other stakeholders where identified) are summarised below.

Barriers:

- The appointed contractor knew exactly how much the Council had to deliver the Box Road Scheme. This put them in a strong negotiating position when agreeing a fee.
- Travel plans were agreed with developers, but new occupiers were not signed up to delivering the plans and often unwilling to implement them.

Enablers:

- The Council is part of the Midlands Highways Alliance Partnership. This enabled them to get a contractor on board very quickly, and helped ensure that the programme was met.
- Strong support from the owners of the Telford Shopping Centre and all land within the Box Road.
- Public exhibitions prior to scheme delivery to inform stakeholders and the public about the changes, and on-going consultation through the delivery programme.

  However, the Town Clerks for Hollinswood and Malinslee both reported that whilst the information provided about the changes being implemented on the ground was good, not enough information was provided about the rationale for the changes. Messages about development and job creation benefits were not thought to have been well advertised. Residents have therefore focused on the traffic disruption which has experienced during the works. Many residents remember 20-30 years ago when

the Box Road was two way. They perceive the recent changes as "going around in circles", and are unclear why the operation of the network has been changed.

- Development of a detailed multi-modal traffic flow simulation model to inform the traffic management approach and support stakeholder consultation and engagement activities. The model was used to test different traffic management scenarios and demonstrate to stakeholders the impact of construction on traffic flow and access. This helped alleviate concerns amongst town centre businesses and the public.

Challenges:

- Managing traffic management arrangements and maintaining access to the town centre car parks, particularly on busy days (e.g. Fridays, Saturdays, Christmas).

- Uncertainty about development proposals for the Telford Shopping Centre and the potential impact on the Box Road, which affected the detailed design of the Box Road Scheme.

- Uncertainty about whether the funding gap associated with the original LSTF award would be met, and when. The scheme proposed in the original LSTF bid assumed ~£9 million funding from the Department for Transport, if successful, and was designed accordingly. If it had been known that only £6 million funding would be made available then a different scheme design would have been proposed. If funding for highway capacity improvements to the wider network (Forge and Malinslee Roundabouts) had not been secured, the integrity and viability of the Box Road Scheme would have been undermined. This created significant uncertainty at the start of the LSTF period, which disappeared once funding from alternative sources had been secured.

- The lead in time for many of the Key Component Package initiatives was substantial (due to procurement, legal, design and piloting processes). By Year 3 initiatives were starting to be effective, but would only have been able to run for a year if the Council had not been successful in securing LSTF Revenue Funding for 2015/16.

- Engaging with different type of businesses. The Council has worked hard to develop different approaches to promoting sustainable travel to different types of businesses. For SMEs the emphasis is on demonstrating the financial and productivity benefits, while larger businesses have more flexibility to focus on wider health and environmental benefits.

5.3.3. Disruption during delivery phase

No sections of the network were closed during constructions, but there were lane closures and temporary traffic signals to maintain safe movements through the works. The works were opened to traffic as soon as each stage was completed.

Stakeholders representing the Telford Shopping Centre, local Councillors and local residents report that while the scheme had been delivered well, it had nonetheless caused significant traffic disruption:

"Traffic was at a standstill on several mornings".

"Personally, I have avoided it like the plague – and shopped in Shrewsbury or Birmingham instead".

The disruption is expected to have deterred some visitors, although retail performance is generally reported to have fared well during the period.

The works also appear to have resulted in some rat running and excessive speeds through local residential roads, which is perceived by some stakeholders to have resulted in at least one serious accident.

5.4. Summary

In 2011, Telford & Wrekin Council were successful in receiving £9.6m funding for two packages of measures to support delivery of the Central Telford Area Action Plan. Together the packages were intended to transform the physical environment in the town centre, reduce the dominance of the car around the Box Road, create a more pedestrian and cycle-friendly town centre, encourage greater use of sustainable modes

for trips within Telford for trips to the centre and other destinations, and create a transport network to support short and long term development within the town centre.

The two LSTF packages were both largely delivered as intended, in terms of scope, programme and spend. Inevitably, the works to the Box Road caused considerable disruption to traffic between April 2014 and April 2015. This is expected to have deterred some visitors.

6. Wider Context (External Environment)

6.1. Introduction

This chapter identifies the changes in the external environment which may have impacted on the effectiveness of the scheme, including:

- town centre regeneration;
- change in profile of visitors and use of the town centre;
- local retail performance and context;
- the wider transport context; and
- wider economic trends.

6.2. Town centre regeneration

In recent years, a number of significant developments have come forward:

- a new Asda store opened in February 2014;
- Phase 1 of the mixed use Southwater development (£250 million) opened in Autumn 2014; and
- work started on implementing a £200 million masterplan to regenerate Telford Shopping Centre in 2014.

These developments, along with recent investment in the Telford International Conference Centre (TICC), Ice Rink and Town Park, and the recent transport changes, are helping to deliver the town centre transformation envisioned in the Central Area Action Plan.

Figure 6. Town centre development sites

6.2.1. Relocation of Asda

A new Asda superstore (including 500 space shoppers' car park) opened in February 2014 in the Southwater Area, on the opposite side of Coach Central to the Telford Shopping Centre (west of Brown Elm Car Park, on a site previously occupied by Telford and Wrekin Council's Civic Offices). This replaced the old Asda store in Telford Shopping Centre. Asda shoppers previously had to pay to park in the town centre car-parks, but are now able to park for free.

Figure 7. New Asda superstore

6.2.2. Southwater Development

The regeneration of the Southwater area is a partnership initiative involving Telford & Wrekin Council, Southwater Event Group, and private sector investors; and is part funded by the Homes & Communities Agency. It aims to create a vibrant and sustainable heart for Telford Town Centre - including a night time economy.

Phase 1, completed in 2014, comprises:

- a 600 space multi storey car park (opened May 2014);
- a 80 bedroom Premier Inn hotel (opened May 2014)
- Southwater1 community facility - new library, Council services and Costa Coffee (opened July 2014);
- an 11 screen IMAX cinema (one of the few in the region) and new bars/restaurants (opened Oct 2014);
- Energy Centre, Visitor Centre, landscaping and new play areas; and
- refurbishment and extension of the Ice Rink.

Phase 2 (medium term, 4-7 years) will involve expansion to the multi storey car park, circa 350 spaces; a hotel; mixed used development; and extension to The International Centre. Phase 3 (long term, 8-15 years) will involve further commercial, residential, office, and retail development.

Phase 1, along with recent investment in the Telford International Conference Centre, Ice Rink and Town Park, is intended to increase town centre footfall and usage, and encourage visitors to combine retail and leisure activities.

Since opening, an increase in footfall in this area of the town has been recorded[9]**, and an evening economy has emerged with footfall extending throughout the evening.** The new restaurants have experienced high trade/footfall since opening, as has Southwater1, attracting over 139,000 visitors since October 2014 – a dramatic increase on the previous library facility which attracted only 37,000 in 2013. Other destinations in the area (e.g. Telford Ice Rink and Telford International Conference Centre) have also reported healthy footfall (despite construction works on the Box Road in 2014); and Telford Town Park is starting to attract internationally recognised events and music acts.

[9] Internal paper provided by T&W Destination Programme Team (April 2015).

Figure 8. Southwater Development

Southwater Development, August 2014

Southwater Development, April 2015

Southwater Development, April 2015

The Southwater Development has also changed the way in which people use the Shopping Centre. Footfall at the Southwater Entrance increased 42% between March 2014 and March 2015, with fewer people using other entrances; and Brown Elm Car Park (next to Southwater) is much busier than previously[10].

6.2.3. Telford Shopping Centre Masterplan

A £200m, five year strategy to regenerate Telford Shopping Centre was given outline planning consent in October 2013. The plans were developed by the owners of the centre, after the adoption of CTAAP.

The masterplan envisages the redevelopment of four key areas of the Town Centre: The Northern Quarter (the site of the old Asda and Red Oak car-park), Central Square, the Southern Quarter (linking to the Southwater development) and the Bus Station area. The proposals will increase the size of the 1 million sq.ft. Telford Shopping Centre by up to 80%.

The masterplan, is closely aligned with the CTAAP vision for a more cohesive, attractive and welcoming town centre; and is underpinned by the following key urban design principles:

- greater integration with the rest of the town centre;
- a greater choice of pedestrian routes across the town;
- new public spaces lined with active uses such as restaurants, and open during the day and evening;
- new landmark buildings at key gateways into the town centre; and
- active retail frontages onto the Box Road.

Southern Quarter – Planning consent was granted in November 2014 for five restaurants and cafés totalling 26,500 sq ft built on the site of the former Focus DIY store, nicknamed the ‘Green Shed’. The development will comprise an elegant, curved frontage creating a new landscaped public area, with extensive outside seating. A striking 'gateway' tower at the western end is intended to provide a strong sense of arrival when approached from Brown Elm Car Park. The development will create a vibrant link joining Telford Shopping Centre (Southwater Mall entrance), the new leisure facilities at Southwater, and the new ASDA store. Demolition of the old 'Green Shed' was completed in 2014. Works on the new development were expected to start in Spring 2016, with a planned opening date in late 2016 / early 2017. As of January 2016, three of the lettings had been secured with on-going discussions regarding the remaining two.

Northern Quarter – A detailed planning application for the Northern Quarter development (on the old Asda site) was submitted in April 2015. Works started in late 2015, and the new retail units are expected to open in late 2016.

Bus Station Area – The current bus station adjoins the Telford Shopping Centre. It creates an eyesore on Coach Central, and does not provide an attractive pedestrian entrance to the Shopping Centre. Proposals involve expansion of the shopping area over the site of the existing bus station; and a new entrance (with tower feature) onto Coach Central, in keeping with the high end retail offer in this vicinity (with shops such as John Lewis and Zara). The current bus station will either be moved to the other side of Coach Central, or be reconfigured within its current site. A planning application is due to be submitted in late 2016, with works expected to start in 2017. Funding for the relocation of the bus station has been secured from the Marches Local Enterprise Partnership.

[10] Based on footfall and parking data provided by Telford Shopping Centre.

6.3. Change in profile of visitors and use of the town centre

During the research period for this study, there have been significant changes in how people use the town centre, in terms of journey purpose and destinations visited, frequency of visits, dwell time, and whether they visit alone or in a group. The role of the recent transport investment in driving these changes is explored in Chapter 9.

The results presented below, are primarily drawn from the:

- the town centre user survey – based on comparison of responses from two separate samples of respondents with different sample characteristics (see Section 6.3.1); and
- the residents panel of retained respondents, where any changes between the before and after surveys represent a real change in behaviour, weighted to be representative of the wider population.

6.3.1. Change in profile of town centre visitors

Results from the town centre user survey show significant changes in the profile of town centre visitors following the recent transport investment and wider development. In general, those visiting the Telford Shopping Centre at the time of the after surveys were:

- less likely to be living within 3km of the town centre (i.e. walking / cycling distance), and more likely to be travelling from further afield (and therefore more likely to be car dependent);
- more likely to be female; more likely to be middle-aged (40-49); and more likely to be in full time work;
- more likely to have access to a car;
- less likely to be visiting the town centre alone and more likely to be travelling with at least one companion; and
- less likely to have a physical disability or other impairment which influences their choice of mode.

These differences were all found to be statistically significant. Hence, while some change may be due to the willingness of particular individuals to be interviewed, the results suggest that there has been **a real change in the profile of town centre visitors**.

Profile differences between Telford Shopping Centre and Southwater visitors

In general, Southwater visitors travelled similar distances to those visiting the main shopping centre and had a similar gender profile (59% females TCS, 60% females SW); but differed significantly from those visiting Telford Shopping Centre in the following ways. Southwater visitors are:

- more likely to be aged less than 30, and less likely to be over 60;
- more likely to be in full-time work;
- less likely to have access to a car or van – perhaps reflecting the lower age and income profiles;
- more likely to be visiting with others – typically in a group of three or four; and
- more likely to be in a lower household income band (under £20,000), reflecting the lower age of many visitors (but both samples include a similar proportion of higher income households, earning over £40,000, which make up about a sixth of the sample).

These differences were also found to be statistically significant.

These differences are all likely to influence perceptions regarding transport accessibility and propensity to use sustainable modes, which will need to be considered when interpreting the study findings.

6.3.2. Journey purpose and town centre destinations visited

Results from the town centre user survey show no significant change in the proportion of Telford Shopping Centre respondents visiting the town centre for:

- shopping (before 85%, after 88%);
- use of services / personal business (before 20%, after 17%); and
- leisure (before 17%, after 21%).

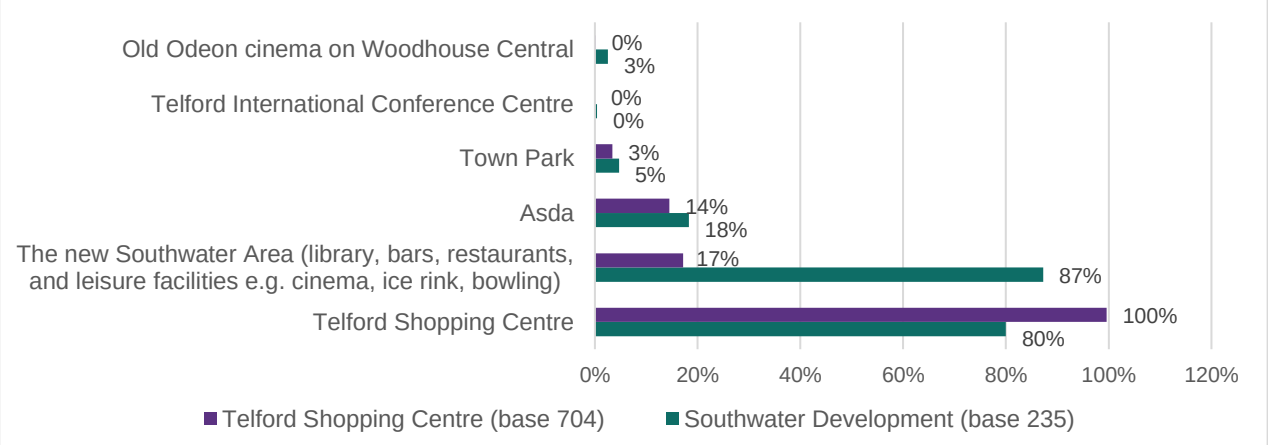
However, some 10% of after respondents (or 17% when asked a different question about town centre destinations visited) stated that they were visiting the Southwater Development, suggesting that some shift of eating/drinking activities from the shopping centre to Southwater.

On average, Telford Shopping Centre respondents visited only 1.35 destinations per visit, suggesting that the majority confined their trip to just the shopping centre. However, some 17% of respondents combined their trips with a visits to the Southwater Development and 15% visited Asda.

In contrast, respondents interviewed in the Southwater Development visited 1.93 destinations per visit on average. In other words, most people were combining their trip with at least one other purpose, generally a trip to the shopping centre (visited by 80% of Southwater respondents).

These results suggest that Southwater is attracting new visitors to the town centre, who are also visiting Telford Shopping Centre as part of their visit.

Figure 9. Town centre destinations visited by respondents (which of following places have you or will you be visiting today?)



Shoppers combining visits to the Telford Shopping Centre and Southwater / Asda, are most likely to have used Coach Central, and have directly experienced the transport changes introduced.

6.3.3. Time spent in town centre (daytime)

Survey results show a significant increase in the proportion of town centre users spending more than two hours in the town centre (41% before, 57% after*), and a similar increase amongst residents (22% before, 33% after).

Dwell times have also increased at all car parks operated by the Telford Shopping Centre *(feedback from TSC Manager)*.

6.3.4. Frequency of visits (daytime)

A high proportion of town centre users and residents (approximately half or more) visit the town centre at least once a week during the daytime (in both the *before* and *after* scenarios), i.e. very frequently.

Town centre users

Responses to the question 'compared with a couple of years ago, do you now visit the town centre more or less frequently, during the day?' (Table 7) shows an increase in reported frequency of daytime visits overall, with a net increase in the proportion of more frequent visitors of +15% (% of more frequent responses - % of less frequent responses) in the after survey.

However, the *after* sample contains a higher proportion of respondents from further afield resulting in an overall reduction in very frequent visitors when compared with the *before* sample (60% *before*, 52% *after**) (Figure 10).

The results suggest that, following the recent transport investment and wider development, the town centre is now attracting more first time and occasional visitors from outside Telford (38% *before,* 50% *after**).

The corresponding results from the before survey (Table 7) shows a stagnant trend during the years prior to the LSTF investment, with most respondents reporting no noticeable change in frequency of visits (77%), and a net change in the proportion visiting more frequently of -4%.

Southwater respondents show similar characteristics to Telford Shopping Centre respondents in terms of change in frequency of visits.

Residents panel

Results from the residents survey (based on a retained sample) support the above findings, suggesting that residents are now visiting the town centre more frequently, than previously - with a net increase in the proportion of more frequent visitors of +7% in the after survey (Table 7), and the proportion visiting more than once a month increasing from 79% to 93% (Figure 10).

However, a notable proportion of residents reported that they are visiting less frequently now (17%[11] or 31%, depending on the form of question). Some may have been deterred by the traffic disruption in the town centre during the main period of works, and not returned since.

Again, the corresponding results from the *before* survey (Table 7) show a trend towards declining frequency of visits during the years prior to the LSTF investment, with over half of respondents reporting no noticeable change (52%), and a net change in the proportion visiting more frequently of -27%.

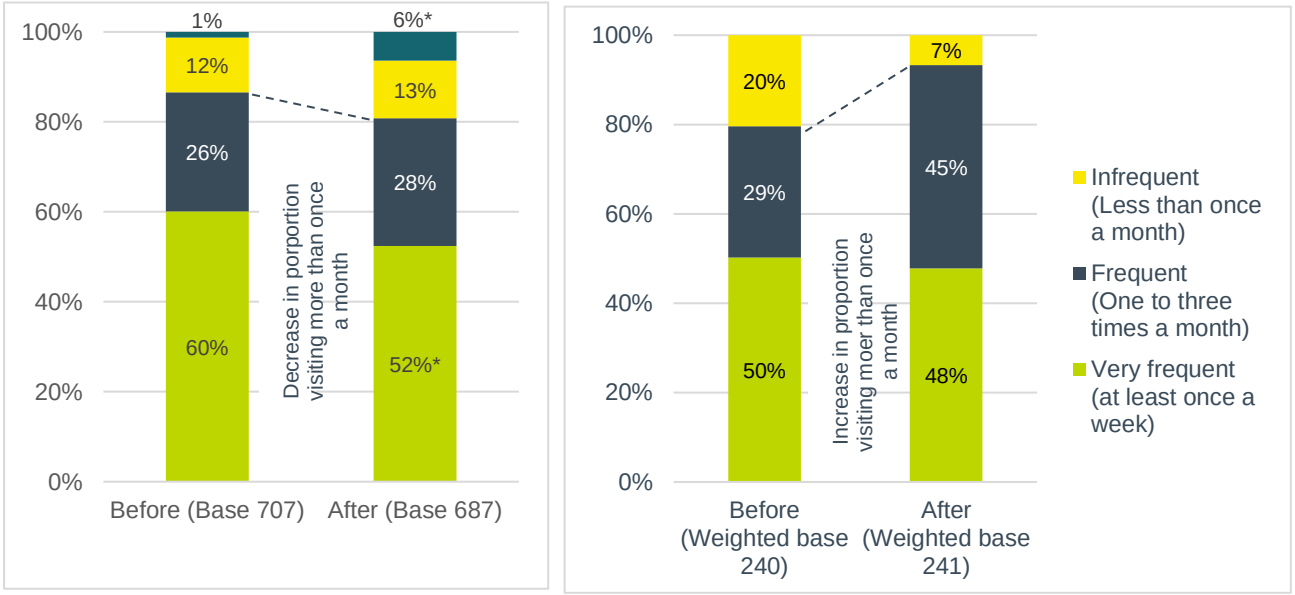
[11] Based on a cross-tabulation of the individual before and after responses for 'How often do you visit Telford town centre during the daytime for reasons other than live or work'.

Table 7. Compared with a year ago, do you now visit the town centre more or less frequently during the daytime

	Town centre users		Residents panel	
	Before	**After**	**Before**	**After**
More (A lot more / A little more frequently)	12% (4%, 6%)	27% (8%, 19%)	10% (1%, 9%)	38% (11%,27%)
Less (A lot less / A little less frequently)	13% (4%, 9%)	12% (4%, 8%)	36% (15%, 21%)	31% (19%, 12%)
No noticeable change	77%	61%	54%	31%
Base	**704**	**658**	**242**	**235**
Net increase (% more - % less)	**-4%**	**+15%**	**-26%**	**+7%**

Figure 10. How often do you visit Telford town centre during the daytime for reasons other than live or work?

a) Town centre users (unweighted) b) Residents panel (weighted)



Significant differences between before and after town centre user results marked with asterix (*).

6.3.5. Frequency of visits (evening)

As expected, the frequency of visits is much lower in the evening, with most visitors visiting less than once a month (in both the *before* and *after* scenarios), i.e. infrequently.

Town centre users

Responses to the question 'compared with a couple of years ago, do you now visit the town centre more or less frequently, during the evening?' (Table 8) shows an increase in reported frequency of evening visits, with a net increase in the proportion of frequent visitors of +11% across the *after* sample. This is due to increased visits amongst those living within Telford (mainly <5kms); with little overall change amongst those living further afield. As a result the proportion of frequent / very frequent visitors across the whole sample has increased from 20% to 31%* (Figure 11).

The results suggest that the recent changes have improved the attractiveness of Telford as an evening destination relative to other centres, for those living within Telford.

It should be noted that these results are based on respondents visiting Telford during the day, so do not reflect the behaviour of evening only visitors.

Southwater respondents show similar characteristics to Telford Shopping Centre respondents in terms of change in frequency of visits.

Residents panel

During the *before* survey the vast majority of residents (four-fifths) reported to be visiting the town centre infrequently (less than once a month) in the evening.

When asked (in the after survey) whether they were now visiting the town centre more or less frequently in the evening, some 37% reported to be visiting more frequently, but surprisingly 25% said that they were visiting less frequently. Nevertheless, this suggests a net increase in frequency of visits of +12%.

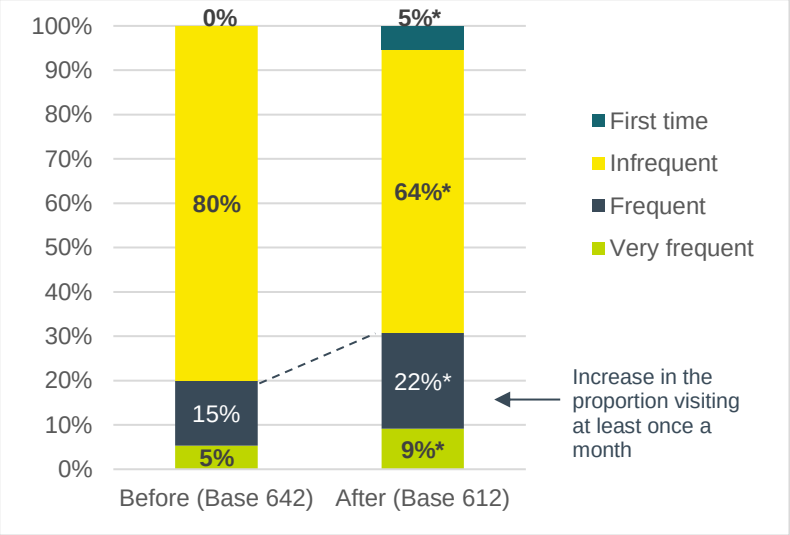
The corresponding results from the *before* survey show a stagnant trend during the period prior to LST investment, with the vast majority reporting no noticeable change (86%).

Table 8. Compared with a year ago, do you now visit the town centre more or less frequently during the evening

	Town centre users		Residents panel	
	Before	**After**	**Before**	**After**
More (A lot more / A little more frequently)	1% (0%, 1%)	19% (3%, 16%)	4% (1%, 3%)	37% (12%, 25%)
Less (A lot less / A little less frequently)	4% (2%, 2%)	8% (5%, 3%)	10% (3%, 7%)	25% (21%, 4%)
No noticeable change	95%	73%	86%	38%
Base	**697**	**547**	**223**	**229**
Net increase (% more - % less)	**-2%**	**+11%**	**-6%**	**+12%**

Figure 11. How often do you visit Telford town centre during the evening for reasons other than live or work?

a) Town centre users (unweighted)



Significant differences between before and after town centre user results marked with asterix (*).
Residents were not asked this question.

6.4. Local retail performance and context

Occupancy rate – The total occupancy rate for the Telford Shopping Centre (TSC) was 98% in December 2015, or 95% in terms of long term occupancy. Historically, the overall occupancy rate has been high within the centre, but dropped slightly (to ~94%) during 2012 to 2014, due to the relocation of Asda and closure of other stores.[12] All units within the Southwater Development are occupied.

Footfall – The Telford Shopping Centre saw a drop in footfall when Asda moved out in 2014, but footfall remained stable in 2015.

Table 9. Telford Shopping Centre footfall data

	2011	2012	2013	2014	2015
Annual % change	-	0%	3%	-6%	0%

The figures for 2015 buck the UK trend, which showed a -2.1% decrease in footfall in Nov 2015 (compared with Nov 2014); and the West Midland trend which showed a -4.1% decline in footfall for the same period.[13]

Car park usage – The number of cars parking at the seven car parks operated by the Telford Shopping Centre (not including the new Southwater Car Park) increased between 2014 and 2015, by 7% between July and December year-on-year – suggesting an increase in visitors to the Shopping Centre.

Retail and leisure offering – The Southwater Development has significantly improved the leisure offering within the town centre and created an evening economy; the new Asda has provide the town centre with a modern and diverse superstore; and a number of new stores have opened within the Telford Shopping Centre (including Yours Clothing, HMV and Toys R Us).

Catchment area and profile – The town centre user before survey indicated a strong local catchment area, with two-thirds of visitors living within 5kms of the town centre. The remaining third came from the surrounding neighbourhoods such as Wellington, and further afield including Shrewsbury, Wolverhampton, and market towns such as Newport and Market Drayton. However, evidence from the after survey suggests that Telford is now attracting more people from further afield, who historically visited other centres. Reports from retailers, shopmobility registration information, and postcodes provided for competitions run by the TSC confirms this trend.

Stakeholder feedback on retail performance – The Shopping Centre Manager reported that retail performance had improved in 2015, with a number of major and high end stores performing particularly well. However, retailers interviewed as part of this study provided a more mixed picture, with only about half reporting that retail confidence was improving.

Footfall and car park data suggests that customers lost during the works have come back, or have been replaced by new visitors *(TSC Manager, Jan 2016)*.

Telford is perceived to be performing better against competing centres such as Wolverhampton and Shrewsbury, due to a combination of factors:

- Improvements in the retail and leisure offering within Telford town centre, and the recent investment.
- A perceived decline in the attractiveness of nearby Wolverhampton, due to the poor quality of the shops, the poor condition of the centre, and a lack of investment *(mentioned by several stakeholders)*.
- Telford town centre has always been viewed as more accessible than Shrewsbury town centre, and the recent transport improvements have reinforced this trend *(TSC Manager, Jan 2016)*.

All focus group participants felt that Telford Town Centre had become a more attractive destination in recent years, as a result of the various investment.

The role of the LSTF investment in driving retail growth is examined in Chapter 9.

[12] Occupancy data provided by Telford Shopping Centre.

[13] http://shopping-centre.co.uk/news/fullstory.php/aid/8651/Shopping_Centre_Data__96_Springboard_Footfall_Index_November_2015.html

6.5. Wider transport context

6.5.1. Highway network

Telford was designed around the car, and has a good highway network which provides fast access to the town centre.

The LSTF Box Road changes, and the capacity improvements to Forge and Malinslee Roundabouts (funded via the Highways Agency and Department for Transport Pinch Point programmes) represent a key element of the transport improvements identified in the CTAAP as necessary to support the planned level of development. However, the CTAAP also identifies the need for capacity improvements at **various other locations around the strategic network**.

Funding has now been secured for two packages of works, enabling the final elements of the Central Telford Area Action Plan to be delivered:

- maintenance and upgrade works Rampart Way and Hall Park Way[14];
- improvements to six key junctions across the outer network outer network, as well as J4 on M54, and associated utilities and infrastructure to deliver three development sites in outer areas of Telford[15].

Once completed, these schemes will help to alleviate pressure on the Box Road. However, in the short term, the changes to the Box Road and the Forge and Malinslee Roundabouts alone are not expected to substantially reduce the volume of traffic using the Box Road.

No other changes to the highway occurred during the research period.

6.5.2. Parking

Central Telford currently has 12 public car parks, including Telford Central Railway Station (Figure 3, Chapter 4.2), providing a capacity of over 6800 parking spaces, mainly in surface car parks owned by Telford Shopping Centre. There are three short stay car-parks inside the Box Road – Yellow Beech, Red Oak, Ash Grey; and four long stay car-parks outside the Box Road – Cherry Pink, Brown Elm, Blue Willow, Lime Green.

Parking tariffs are relatively low (e.g. £1.60 for up to 2 hours; £3.00 for more than 3 hours in a long stay car-park). Tariffs have increased only marginally in the last 8 years.

Car-park surveys in 2009 showed that some car-parks (e.g. Red Oak next to the old Asda) were operating at capacity; but others still had spare capacity. However, modelling work undertaken for CTAAP identified a need for parking provision to be increased in the period up to 2016 to accommodate the level of growth identified in the Plan.

A new 600 space multi-storey car-park opened in May 2014 on the Southwater site to cater for demand associated with the new development. The car-park is owned and operated by the Council and the parking charges are the same as those for short stay TSC car-parks. This has resulted in a short-term increase in the availability of parking (spaces/retail floorspace) within the town centre.

6.5.3. Public transport (bus)

Between 2001 and 2006 the Council worked in partnership with Arriva, the dominant bus operator in the area, to develop a series of Quality Bus Routes comprising branded, high frequency routes to link the Town Centre, the rail station and the satellite communities. The Bus Station is located on Coach Central, providing direct access to and from Telford Shopping Centre. This is due to be replaced in 2017 (see Section 6.2.3).

No substantive changes to services occurred in the following years, however, **Arriva made significant changes across its network in July 2015 (following completion of the LSTF package, but prior to the questionnaire surveys, retailer interviews and focus groups).** Some routes were changed or cut, and

[14] Telford Town Centre Connectivity Package (£12.3m) was awarded £10.3m from the DfT's Local Maintenance Challenge Fund to upgrade the station pedestrian / cycle overbridge, and maintain and upgrade Rampart Way and Hall Park Way (both important links on the strategic highway network. Works took place in 2015/16, following completion of surveys for this research.

[15] As part of the Local Growth Deal, The Marches LEP and Central Government agreed to fund the Telford Growth Package, costing £17.37 million in total (with Central Government investing £10.3m, including £5.0m for 2015-16).

some frequencies were reduced. Where two parallel services were in operation, the express service was stopped and the circuitous and stopping service was retained (increasing journey times for those on the affected route).

Bus patronage across the borough has declined steadily since 2007 through to 2015, with excess waiting time and punctuality index deteriorating too. However, **the decline in patronage in the town centre slowed in the last two LSTF years**, whilst patronage at the rail station increased slightly[16].

6.5.4. Public transport (rail)

Telford is served by a mainline railway line, which provides an important link, north to Wales and Shrewsbury, south to Wolverhampton and Birmingham, as well as the residential areas of Oakengates and Wellington (within Telford & Wrekin Borough).

Telford Central is some distance from the town centre by foot (around 700m which is still an easy walkable distance in less than 10 minutes), but there are good bus links with bus priority measures. Walking and cycling access is via a major overbridge across the A442 and A5 Rampart Way.

Figure 12. A442 / A5 pedestrian and cycle overbridge from rail station (existing)

The bridge offers limited protection from the weather and is poorly lit, and is in need of modernisation. However, in March 2015, the Telford Town Centre Connectivity Package (£12.3m) was awarded £10.3m to upgrade the station pedestrian footbridge, and maintain and upgrade a key part of the town centre strategic highway network (Rampart Way and Hall Park Way). The new three span overbridge was due to be constructed in 2016, and represents the final element of the Central Telford Area Action Plan. The proposed design opens up the opportunity for the future dualling of Hall Park Way and Rampart Way, to support the further development of Telford Town Centre.

The **link between the overbridge and the station was improved as part of the LSTF package**.

Rail patronage at all stations in the borough, including Telford Central, has been increasing steadily for the last 10 years[17]. This growth is likely to have been driven by a range of factors, and it is difficult to isolate the specific effects of the LSTF programme.

6.5.5. Active Travel (walking and cycling)

Pedestrian and cycle links

Telford has an extensive green network (100 miles+) with lots of off-road/segregated routes. The LSTF package is focused on filling gaps and upgrading signs and surfacing to make the most of the existing infrastructure. The Council is also seeking funding to improve cycle and walking links between the town centre and the adjacent housing estates.

[16] LSTF Outcome Monitoring Report (T&W Council, March 2016).
[17] LSTF Outcome Monitoring Report (T&W Council, March 2016).

Trends in walking and cycling (Active People Survey)

Evidence from the DfT's Active People Survey shows levels of walking for utility purposes in Telford & Wrekin are lower than the national average. Comparison of data for 2012/13 and 2013/14 shows a **significant increase in levels of walking at a national and regional level** (e.g. a 4.2% increase in the proportion walking three times a week in the West Midlands); however, the sample size for Telford & Wrekin is insufficient to determine whether a similar increase has been replicated in Telford.

The survey also shows that shows that levels of cycling for utility purposes are much lower than levels of walking (reflecting the findings of the primary research), and are lower than those for the rest of the West Midlands and across England. Comparison of data for 2012/13 and 2013/14 shows **a decrease in levels of cycling at a regional level** (-0.2% for the proportion cycling three times a week, not significant; but the decreases in the proportion cycling once a week and five times are significant); however, the sample size for Telford & Wrekin is insufficient to determine the direction of travel (i.e. the margin of error is too large).

Table 10. Proportion of residents who cycle (any length) for utility purposes at a given frequency

	Walking 3 times a week			Cycling 3 times a week		
	2012/13	**2013/14**	**Increase**	**2012/13**	**2013/14**	**Increase**
Telford & Wrekin	29.2%	25.2%	-4.00%	0.8%	1.2%	0.4%
West Midlands	26.8%	31.0%	**4.20%***	1.7%	1.5%	-0.2%
England	30.2%	33.0%	**2.80%***	2.6%	2.6%	0.0%

**Significant change in proportion of residents.*

The above results show evidence of an increasing trend in walking levels, suggesting that there is a likelihood that some increase in walking would have occurred to / within the town centre, with or without the LSTF / Balanced Network investment. However, the same is not true for cycling, where there has been a decline at a regional level.

Trends in walking and cycling (Manual Counts)

One day cycle counts undertaken by Telford & Wrekin Council at 16 sites across the borough since 2016 and 19 sites since 2012 (excluding the town centre) show that pedestrian and cycle flows have historically shown considerable fluctuation from year to year. However:

- pedestrian flows declined by -8% between 2012 and 2015; and
- cycle flows increased by 28% across the full set of 19 sites, and by 23% across the smaller set of 16 sites between 2012 and 2015.

6.5.6. Post LSTF investment in sustainable travel

Telford & Wrekin Council were successful in securing LSTF revenue funding for 2015/16 to deliver its *Telford Future - local action for sustainable growth strategy (£1.9 million)*. The fund was targeted at continuing to deliver the following LSTF1 initiatives: Gorge Connect Park & Ride, Low Carbon Life Skills Project, Travel Plan Officer to engage with businesses, Personalised Journey Planning (car share, wheels to work, hospital travel plan), and the Town Park Cycle Experience Hub. It also included funding for the maintenance of the cycle network as part of the Pride in the Community programme.

These initiatives were being implemented during the time the after surveys were undertaken for this study.

6.6. Summary

The above chapter identifies the following changes in the external environment, which may have affected frequency and use of the town centre, perceptions of accessibility, or travel patterns to date, aside from any impacts relating to the LSTF investment.

Town centre regeneration

- In recent years, there has been significant development and investment in the town centre – expansion of the Telford International Conference Centre (pre-LSTF), refurbishment of the Ice Rink (2013), a new Asda on Coach Central (February 2014), Phase 1 of the Southwater development (Autumn 2014), and improvements to the Town Park (over the last 5 years). These developments have increased footfall in the Southwater area, and and an evening economy has emerged with footfall extending throughout the evening[18].

Change in use of the town centre

- During the research period for this study, there have been significant changes in the profile of town centre visitors and how people use the town centre.

- Visitors are now more likely to be combining shopping and leisure trips. The survey results suggest that Southwater is attracting new visitors to the town centre, who are also visiting Telford Shopping Centre as part of their visit. A high proportion of those interviewed in the Southwater Development (80%) were also visiting Telford Shopping Centre, but the vast majority of visitors were only visiting the Telford Shopping Centre. *Shoppers combining visits to the Telford Shopping Centre and Southwater / Asda, are most likely to be impacted by the transport changes introduced.*

- Survey respondents living in Telford, and those visiting the Telford Shopping Centre and/or Southwater Development all reported to be visiting the town centre more frequently during the daytime than previously; in contrast to a stagnant or declining trend in recent years. However, the town centre now appears to be attracting a higher proportion of visitors from further afield (>10kms) resulting in an overall reduction in very frequent visitors and more first time and occasional visitors from outside Telford, across the entire profile of town centre visitors.

- Frequency of visits has also increased in the evening amongst those living within Telford; again, in contrast to a stagnant or declining trend in recent years. The results suggest that the recent changes have improved the attractiveness of Telford as an evening destination relative to other centres, for those living within Telford; although there has been little change in frequency of visits amongst those living further afield. *TSC reports that sales of evening extensions at their car parks have increase.*

- A notable proportion of residents (up to a third, depending on the form of question) reported that they are now visiting less frequently in both the daytime and evening. Some may have been deterred by the traffic disruption in the town centre during the main period of works, and not returned since.

- Overall, town centre visitors are now more likely to be travelling more than 10kms; travelling as a group; spending more than 2 hours in the town centre; and are more likely to be combining shopping and leisure trips. Those visiting Southwater are less likely to have access to a car or van compared with Telford Shopping Centre visitors - perhaps reflecting the lower age and income profiles. These factors are all likely to influence perceptions regarding transport accessibility and propensity to use sustainable modes.

- The role of the recent transport investment in driving the above changes is explored in Chapter 9.

Local retail performance and context

- In general, the retail economy in the town centre has shown positive signs post LSTF investment and wider development activity in the town, although only 10 out of 20 retailers interviewed described the local economy as growing.

[18] Internal paper provided by T&W Destination Programme Team (April 2015).

- The Southwater Development has substantially improved the leisure offering within the town centre and created an evening economy; the new Asda has provide the town centre with a modern and diverse superstore; and a number of new stores have opened within the Telford Shopping Centre.
- Occupancy levels within the TSC have remained high and all units in the Southwater Development are occupied.
- Footfall has remained stable since the relocation of Asda in 2014, bucking regional and UK trends for the period 2014-2015.
- Car park occupancy at sites operated by the TSC increased by 7% between 2014 and 2015 (Jul-Dec).
- Telford is perceived to be performing better against competing centres such as Wolverhampton and Shrewsbury, and is attracting more people from further afield.
- Footfall and car park data suggests that customers lost during the works have come back, or have been replaced by new visitors.

Wider transport context

- There have also been a number of changes to the transport network:

  - A new 600 space multi-storey car-park opened in May 2014 on the Southwater site to cater for demand associated with the above development.
  - Arriva made significant changes across its network in July 2015 (following completion of the LSTF package, but prior to the questionnaire surveys, retailer interviews and focus groups). Some routes were changed or cut, and some frequencies were reduced.
  - Improvements to Forge and Malinslee Roundabouts to remove through traffic from the town centre (part of the original LSTF bid, but funded separately).

- There have also been changes in use of various modes across the borough which are likely to be the result of various factors, alongside the recent investment in sustainable transport:

  - Bus patronage across the borough has declined steadily since 2007 through to 2015, with excess waiting time and punctuality index deteriorating too. However, the decline in patronage in the town centre slowed in the last two LSTF years, whilst patronage at the rail station increased slightly.
  - Rail patronage at all stations in the borough, including Telford Central, has been increasing steadily for the last 10 years.
  - Evidence from the DfT's Active People Survey shows an increasing trend in walking levels, suggesting that there is a likelihood that some increase in walking would have occurred to / within the town centre, with or without the LSTF investment. However, the same is not true for cycling, where there has been a decline at a regional level.

- The changes to the Box Road and the Forge and Malinslee Roundabouts represent only part of the CTAAP proposals, and on their own were not expected to substantially reduce the volume of traffic using the Box Road during the timescales covered by this research.

- Funding for the revenue elements of the LSTF package continued during 2015/16. These initiatives were being implemented during the time the after surveys were undertaken for this study.

Wider economic trends

- Over the period of LSTF investment (2012-2015), there has been a general improvement in the borough wide economy, with more business, more jobs and fewer people out of work, increased Gross Value Added and higher employee earnings.[19]

- Despite improvements in the above economic statistics, the Index of Multiple Deprivation for Telford & Wrekin deteriorated between 2010 and 2015. However, some of the most deprived areas south of the town centre, which were directly targeted by the LSTF measures, improved their ranking in the same period. This includes parts of Malinslee, Hollinswood and Dawley Bank.[20]

[19] LSTF Outcome Monitoring Report (T&W Council, March 2016).
[20] LSTF Outcome Monitoring Report (T&W Council, March 2016).

7. Impact – Perceptions

7.1. Introduction

This chapter examines the impact that the sustainable travel investment has had on:

- general perceptions regarding access to the town centre by sustainable modes;
- awareness of LSTF initiatives;
- impact of LSTF investment on perceptions of access to the town centre; and
- perceptions regarding the effectiveness of specific LSTF initiatives.

The primary evidence sources are the town centre user survey and the residents survey; with evidence from the focus groups and stakeholder interviews used to add depth and context to the survey results.

For the town centre users, change in perceptions are based on comparison of responses from two separate samples of respondents with different sample characteristics (see Chapter 6.3), which may influence the observed level of change. Confidence intervals (based on 95% probability) have been calculated to determine whether differences in the before and after samples represent a statistically significant difference in the wider population. Statistically significant differences are marked with an asterix (*) or 'sig'.

For the residents survey, before and after responses are based on the same sample of residents. Any changes reported between the before and after surveys therefore represent a real change across the sample of respondents interviewed, weighted to be representative of the wider population[21]. Nevertheless, the panel of respondents do represent a sample of the population, and confidence intervals are still useful to understand how the overall response proportions compare to the true population. Confidence intervals (based on 95% probability) have therefore been calculated to determine whether real differences in the before and after samples are sufficiently large to indicate a significant change in the wider population. Statistically significant differences are marked with an asterix (*) or 'sig'. See Section 2.3.1 for further information.

[21] Note, however, the before and after surveys were undertaken at different points of time, and the robustness of the results relies on resondents answering in a consistent and accurate manner.

7.2. General perceptions regarding access to the town centre by sustainable modes

Town centre user and resident survey respondents were first asked about their general perceptions regarding access to the town centre. No specific reference was made to any of the recent sustainable travel measures at this stage.

7.2.1. Perceptions amongst those familiar with sustainable travel options

Overall, the majority of survey respondents who felt that they had sufficient knowledge to comment (i.e. excluding 'don't knows') had positive perceptions of accessibility:

- More than half of town centre users and residents described access as 'easy' for each of the modes in question, in both the *before* and *after* surveys.
- Access by bus was perceived to be easier than by foot or cycle.

Before and after changes are interpreted in the sections below.

Table 11. In general, how easy would you say it is to access the town centre by the following modes? (Excluding don't knows)

Town centre users (unweighted)

CAPI On-street	Bus – within 5 kms only		Cycle – within 5 kms only		Walk – within 3 kms only	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	83%	88%	**54%**	**71%***	**71%**	**83%***
Neither easy or difficult (3)	6%	3%	**19%**	**8%***	11%	5%
Slightly difficult (2) or very difficult (1)	11%	9%	27%	21%	18%	12%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Base[1]	**387**	**252**	**279**	**148**	**217**	**141**
Mean perception score[2]	**4.19**	**4.35**	**3.37**	**3.77***	**3.87**	**4.19***

1. The after sample includes a higher proportion from further afield, reducing the number in scope in the after data.
2. Shading based on mean score: light green = 3.0-3.5; mid green = 3.5-4.0; dark green = 4.0-4.5.
Significant differences between before and after results marked with asterix (*).

Residents panel (weighted)

CATI Telephone	Bus		Cycle		Walk	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	75%	69%	63%	54%	54%	60%
Neither easy or difficult (3)	8%	9%	23%	24%	**19%**	**8%***
Slightly difficult (2) or very difficult (1)	17%	22%	14%	22%	27%	32%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Weighted base	**137**	**137**	**90**	**90**	**162**	**162**
Mean perception score[1]	**3.97**	**3.89**	**3.72**	**3.53**	**3.40**	**3.45**

1. Shading based on mean score: light green = 3.0-3.5; mid green = 3.5-4.0; dark green = 4.0-4.5.
Significant differences between before and after results (with respect to the wider population) marked with asterix (*).

7.2.3. Perceptions amongst all respondents (including don't knows)

A substantial number of town centre users and residents (up to 55%) felt unable to comment, and provided a 'don't know' response. Lack of awareness or understanding is likely to act as a barrier to the future use of sustainable modes for these individuals.

Surprisingly, the proportion of 'don't knows' increased in the after survey for all modes. The reason for this is unclear, but could reflect a reluctance to participate[22]. It is worth noting that amongst the retained sample of residents, different respondents stated 'don't know' in the before and after surveys, suggesting a lack of consistency and accuracy in the responses given by some individuals. This suggests that the results do not fully represent the views of all those interviewed; but are still considered to be broadly representative.

Before and after changes are interpreted in the sections below.

Table 12. In general, how easy would you say it is to access the town centre by the following modes? (Including don't knows)

Town centre users (unweighted)

CAPI On-street	Bus – within 5 kms only		Cycle – within 5 kms only		Walk – within 3 kms only	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	**76%**	**67%***	36%	32%	57%	59%
Neither easy or difficult (3)	**5%**	**2%***	**12%**	**4%***	**9%**	**4%***
Slightly difficult (2) or very difficult (1)	**10%**	**7%***	**18%**	**9%***	**15%**	**9%***
Don't know (0)	**9%**	**23%***	**34%**	**55%***	**19%**	**29%***
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Base[1]	**425**	**328**	**425**	**328**	**268**	**198**
Mean perception score[2]	**3.82**	**3.34**	**2.21**	**1.70***	**3.13**	**2.98***

1. The after sample includes a higher proportion from further afield, reducing the number in scope in the after data.
2. Shading based on mean score: pale yellow = 1.0-2.0; yellow-green = 2.0-3.0; light green = 3.0-3.5; mid green = 3.5-4.0; etc. 'Don't know responses excluded from score calculation.
Significant differences between before and after results marked with asterix (*).

Residents panel (weighted)

CATI Telephone	Bus		Cycle		Walk	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	54%	48%	**35%**	**25%***	41%	43%
Neither easy or difficult (3)	6%	7%	13%	10%	15%	6%
Slightly difficult (2) or very difficult (1)	12%	18%	**18%**	**11%***	28%	27%
Don't know (0)	27%	27%	**33%**	**54%***	15%	24%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Weighted base	**242**	**242**	**242**	**242**	**242**	**242**
Mean perception score[1]	**2.88**	**2.80**	**2.18**	**1.60***	**2.72**	**2.55**

1. Shading based on mean score: pale yellow = 1.0-2.0; yellow-green = 2.0-3.0; light green = 3.0-3.5; mid green = 3.5-4.0; etc.

Significant differences between before and after results (with respect to the wider population) marked with asterix (*). 'Don't know responses excluded from score calculation.

[22] For both surveys (especially the residents) it proved challenging to achieve the target sample sizes for the 'after' period, despite using the same methodology for both waves. Respondents may simply have said 'don't know' to get through the interview quickly.

7.2.5. Ease of access by bus

Town centre users - Perceptions amongst those familiar with bus as a travel option and living within 5kms of the town centre (the target LSTF market) were high in both the before and after samples - 83% *before* and 88% *after* described access as 'easy' *(not significantly different)*. (Table 11)

Perceptions were also relatively high amongst all town centre users (including 'don't knows'). Comparison of *before* and *after* responses shows a significant decrease in the proportion describing access as 'easy' (76% *before,* 67% *after*), but this is largely due to substantially more 'don't know' responses, resulting in a deterioration in the mean perception score. (Table 12)

Residents – Perceptions of ease of access have worsened amongst residents. Amongst those familiar with bus as a travel option the proportion describing access as 'difficult' increased from 17% to 22% (Table 11), with the corresponding proportions for all residents increasing from 12% to 18% (Table 12).

Analysis of individual responses shows that, a net proportion of residents reported an improvement over time. However, those stating that their perceptions had improved typically reported a small change (e.g. from 'fairly' to 'very' easy), while those whose perceptions had deteriorated reported a larger change (e.g. from 'fairly easy' to 'slightly difficult'.

Overall - Overall, there is no evidence to suggest that town centre users or residents perceive there to have been a general improvement in access to the town centre by bus.

Some focus group participants felt that the new two way operation on Box Road had provided a more direct route to the bus station, resulting in shorter journey times. However, Arriva made significant changes to its network in July 2015 (following completion of the LSTF package but prior to the questionnaire surveys). Some routes were changed or cut, and some frequencies were reduced. Where two parallel services were in operation, the express service was stopped and the circuitous and stopping service was retained, increasing journey times for those on the affected route. This may have explain the lack of perceived accessibility benefits by bus reported by the two survey groups.

7.2.6. Ease of access by walking

Town centre users - Perceptions amongst those familiar with walking as a travel option and living within 3kms of the town centre (the target market for mode shift) showed a significant improvement between the two survey waves - 71% *before* and 83% *after* described access as 'easy' (Table 11).

Amongst all town centre users (including 'don't knows') the proportion describing access as 'easy' remained the same (57% *before*, 59% *after*). There was a significant reduction in the proportion describing access as 'difficult' or 'neither easy or difficult', but this is offset by the increase in 'don't know' responses resulting in a reduction in the mean perception score (Table 12).

Residents – A similar trend is evident amongst residents. Amongst those familiar with walking as a travel option the proportion describing access as 'easy' increased from 54% to 60% (Table 11). However, in the wider population, there was little change in the proportion describing access as 'easy' or 'difficult'. (Table 12).

A third of respondents (91, 38%) changed their perception either positively (49, 20%) or negatively (42, 17%) between the two survey waves. The remainder of the sample provided the same response (70, 29%) or said 'don't know' in either or both of the surveys (81, 33%).

Overall - Overall, the survey evidence suggests that perceptions regarding ease of access to the town centre by foot have improved amongst those familiar with walking, but there has been little change in the overall population. However, a substantial proportion responded 'don't know', in the *after* survey (29% of town centre users, and 24% of residents), indicating a general lack of awareness or consideration of walking as an option.

Focus group participants commented that conditions for walking had improved recently, through the Town Park and on the Silken Way (both elements of the LSTF package). However, this only benefits those accessing the town from the south. Other areas (such as Shifnel, Madeley, and Ketley Park) were still felt to have poor linkages into the town centre.

Note – Most capital elements of the LSTF package were concentrated in the town centre, benefiting the end points of trips only. Residents across Telford were encouraged to use active modes more, through journey planning and awareness initiatives, but these were not specifically targeted at trips to the town centre.

7.2.7. Ease of access by cycling

Town centre users - Perceptions amongst those able to comment on cycling as a travel option and living within 5kms of the town centre (the target market for mode shift) were low in before survey, in comparison with other modes. However, the results show a significant increase in those describing access as 'easy', from 54% *before* to 71% *after* (Table 11).

Amongst all town centre users (including 'don't knows') the proportion describing access as 'easy' showed little change (36% before, 32% after, *not significantly different*). As with walking, there was a significant reduction in the proportion describing access as 'difficult' or 'neither easy or difficult' between the two survey waves, but this is offset by the increase in 'don't know' responses resulting in a reduction in the mean perception score (Table 12).

Residents – Perceptions amongst residents were less positive. Amongst those familiar with cycling as a travel option the proportion describing access as 'difficult' increased from 14% to 22% (Table 11). Amongst all residents, including 'don't knows', there were similar declines in the proportions describing access as 'easy' and 'difficult' and a corresponding increase in 'don't know' responses (Table 12).

A quarter of residents (57, 24%) changed their perception either positively (25, 10%) or negatively (32, 13%), resulting in a reduction in the mean perception score. The remainder of the sample provided the same response (32, 13%) or said 'don't know' in either or both of the surveys (152, 63%).

Overall - Overall, the survey evidence suggests that perceptions regarding ease of access to the town centre by cycle have improved amongst town centre users those familiar with cycling, but not amongst residents. Perceptions amongst the wider population are mixed, but show no clear evidence of an improvement.

A substantial proportion of both groups responded 'don't know', in the *after* survey (55% of town centre users, and 54% of residents), indicating a general lack of awareness or consideration of cycling as an option.

Focus group participants felt that while the recent investment has improved the environment for cyclists in the town centre, the deficiencies in the wider network mean that the point to point journey is still too dangerous for most people to consider cycling as a viable mode.

"I'm pretty sure that I'd get myself run over. These roads are not made for cyclists"

7.2.8. Experience of using different modes

Survey respondents who indicated that they had travelled to the town centre by cycle or foot in the last 12 months were asked to rate, on a scale of 1 to 5, a number of mode-specific attributes. A mean experience score was then calculated for each attribute, based on the scores given (where 1 = very poor and 5 = very strong).

Experience ratings for walking - The experience ratings for walking are summarised in Table 13. It should be noted that the sample sizes are very small. These results should therefore be treated with caution, and indicative only.

Town centre users - The majority of town centre users in the *before* survey rated walking indicators at the positive end of the scale, leaving little scope for improvement in the *after* surveys. Despite considerable investment in walking infrastructure within the town centre (and taking the above caveats into account), comparison of the mean scores from the before and after surveys, shows:

- a **significant decline in ratings** for quality of environment within the town centre, quality of routes on approaches to the town centre, and risk of accident; and
- **no overall change** for personal security and signage.

Residents – The rating scores from residents were more neutral, with little change reported across the various attributes, except for personal security, with the proportion describing this as 'good' dropping from 74% *before* to 56% *after*.

Note – Focus group respondents reported (unprompted) that the new lighting and the increase in people visiting the Southwater area in the evening had improved their sense of security – contradicting the above finding. However, other parts of the Box Road were still felt to be very quiet during the evening.

Table 13. Experience ratings for walking – How would you rate walking for the following?

Town centre users (unweighted)

	Quality of environment (within the town centre)		Quality of routes (approaches to town centre)		Risk of accident		Personal security		Signage	
	Before	After	Before	After	Before	After	Before	After	Before	After
Very or fairly good	**100%**	**83%***	**94%**	**80%***	**78%**	**48%***	69%	70%	75%	76%
Neither good nor poor	**0%**	**11%***	6%	11%	22%	34%	22%	17%	16%	16%
Fairly poor / very poor	**0%**	**6%***	**0%**	**9%***	**0%**	**18%***	9%	13%	9%	8%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Base	32	65	32	65	32	61	32	64	32	63
Mean score	**4.41**	**4.20***	**4.34**	**4.05***	**4.06**	**3.23***	**3.75**	**3.78**	**3.84**	**3.88**
Summary	***Signif decline in % good***		***Signif decline in % good***		***Signif decline in % good***		***No significant change***		***No significant change***	

Significant differences between before and after results marked with asterix (*).

Residents panel (weighted)

	Quality of environment (within the town centre)		Quality of routes (approaches to town centre)		Risk of accident		Personal security		Signage	
	Before	After	Before	After	Before	After	Before	After	Before	After
Very good / fairly good	82%	84%	74%	76%	66%	67%	74%	56%	80%	82%
Neither good nor poor	13%	17%	26%	13%	20%	20%	7%	26%	10%	13%
Fairly poor / very poor	5%	0%	0%	11%	14%	13%	19%	17%	10%	6%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Weighted base	32	**34**	30	**35**	32	**32**	31	**36**	27	**34**
Mean score	**4.05**	**4.36**	**4.12**	**4.07**	**3.72**	**3.79**	**3.79**	**3.59**	**3.90**	**4.16**
Summary	***Marginal change in % good***		***Marginal change in % good***		***Marginal change in % good***		***Real decline in % good***		***Marginal change in % good***	

Overall - These results do not reflect the outcome expected; and do not appear to reflect the general support for the LSTF measures presented in the next section of this chapter.

However, the question was primarily focused at routes into the town, while the majority of LSTF investment has been in the town centre, affecting only the end section for most trips. Furthermore, the small sample sizes eligible to answer this question means the scoring and percentages are inherently more sensitive in calculation.

Experience ratings for cycling - There were insufficient cyclists within the samples to provide meaningful results on the cycling attributes.

7.3. Awareness of LSTF initiatives

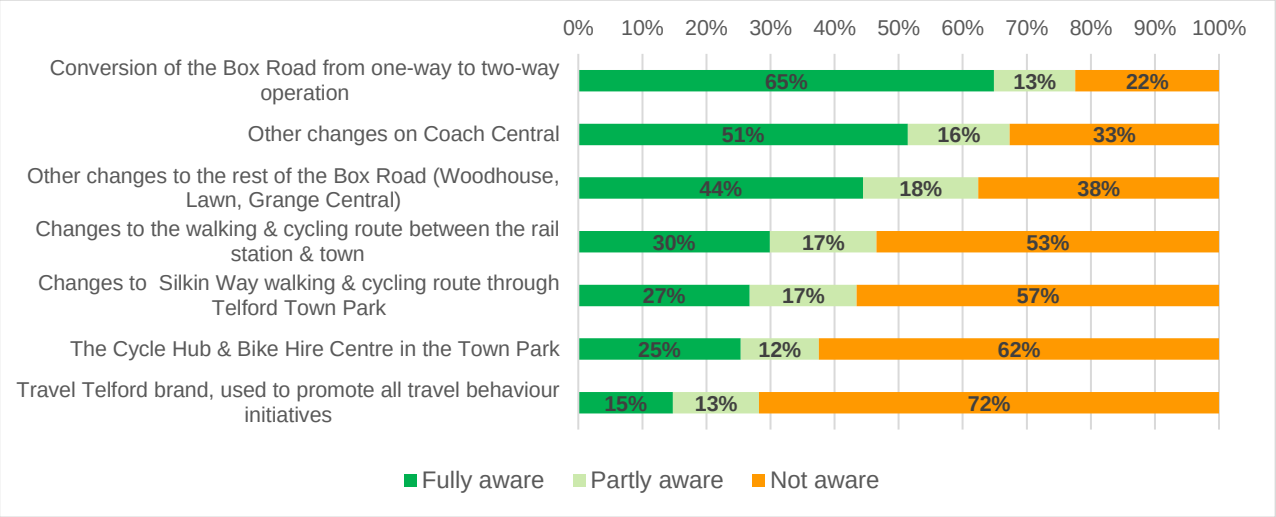
Town centre users and residents were then asked about their awareness of the various LSTF funded sustainable transport measures (*after* survey only).

Town centre users

A large majority of those interviewed in the town centre (>60% in all cases) were fully or partly aware of changes made to the Box Road, including conversion from one-way to two-way. This is to be expected, as anyone visiting the town centre does so via the Box Road.

However, town centre users were much less aware (<50% in all cases) of interventions away from the Box Road, which affect a smaller proportion of users, i.e. changes to the walking and cycling route between the rail station and the town centre, changes to the Silkin Way, and the Cycle Hub and Hire Centre in the Town Park. These lower levels of awareness partly reflect the more peripheral nature of the locations, but are also likely to be a symptom of the car dominated mode share. The results suggest a need for further work in raising awareness of these new facilities. Town centre users had particularly low levels of awareness (28% only) of the Travel Telford brand, used to promote travel behaviour initiatives.

Figure 13. Awareness of LSTF interventions amongst those interviewed in the town centre



Base = 900. Interviews undertaken in Telford Shopping Centre and Southwater Development. First time visitors not asked.

Regression analysis[23] shows that town centre users who live closest (0-3 km away), those who visit very frequently (vs. infrequently), and Telford Shopping Centre users (vs. Southwater Development users) were more likely to be aware of the recent LSTF schemes *(awareness_sum)*.

Residents panel

Residents were asked 'are you aware that there have been a number of changes to the road network and facilities for pedestrians, cyclists, and public transport users in the town centre and beyond over the last couple of years?' A large majority (89%) reported that they were fully or partly aware of the changes made, with only 12% stating that they were not aware.

Focus group

Approximately half of participants were unaware that the speed limit on Coach Central had changed to 20mph.

[23] Based on univariate and multivariate regression models. The dependent variable (awareness_sum) has been calculated as the sum of the awareness scores for individual measures, where 0 = not aware / don't know, 1 = partly aware, 2 = fully aware. See Section A.4.3 in Supporting Technical Appendices for detailed results.

7.4. Impact of LSTF investment on perceptions of access to the town centre

While a comparison of before and after results regarding general perceptions of access to the town centre by sustainable modes does not show an overall improvement between the two survey periods, respondents were more positive when asked specifically "what impact have the recent transport schemes in Telford had on access to the town centre by the following modes?" (Table 14)

Over half of respondents (town centre users, 59%; residents, 58%) felt that access by car had got easier.

For other modes, the majority of respondents stated 'no change' or 'don't know'. However, the remaining respondents reported a net increase in use of:

- bus (town centre users, +25%; residents, +11%);
- walking (town centre users, +11%; residents, +24%); and
- cycling (town centre users, +6%; residents, +16%).

Very few felt access by train had changed. There were no significant changes to the train service during the study period, although the pedestrian and cycle route between the station and the town centre was upgraded. While this measure is intended to improve door-to-door journeys by train, it is likely that respondents would have captured this impact in their response to the walking and cycling elements of this question.

In general, less than about 1 in 10 respondents felt that access by any mode had got more difficult as a result of the recent investment.

Table 14. What impact have the recent transport schemes in Telford had on access to the town centre, by the following modes? (After only)

Town centre users (unweighted)

CAPI - On street	Car	Bus	Train	Cycle	Walk
Easier	59%	28%	3%	6%	12%
No change	20%	17%	14%	9%	14%
More difficult	4%	3%	1%	0%	1%
Don't know	17%	52%	82%	85%	73%
Total	100%	100%	100%	100%	100%
Base[1]	675	675	675	675	675
Net improvement (% easier - % more difficult)	**+55%**	**+25%**	**+2%**	**+6%**	**+11%**

1. First time visitors were not asked this question.

Residents panel (weighted)

CATI - Telephone	Car	Bus	Train	Cycle	Walk
Easier	58%	18%	5%	16%	26%
No change	18%	27%	35%	16%	34%
More difficult	12%	7%	1%	2%	2%
Don't know	11%	47%	59%	65%	38%
Total	100%	100%	100%	100%	100%
Weighted base	242	242	242	242	242
Net improvement (% easier - % more difficult)	**+46%**	**+11%**	**+4%**	**+16%**	**+24%**

Regression analysis

Regression analysis[24] undertaken using the town centre user survey data shows behavioural and destination differences in perceived impact of the LSTF interventions on town centre access (easier, no change or more difficult; *accessimpact_sum*), but not socio-demographic differences. Those who lived more than 10 km away (vs. 0-3 km) were less likely to have perceived town centre access to have improved as a result of the recent transport changes. Southwater Development users were less likely to perceive a positive impact than Telford Shopping Centre users ($p<.001$). Among Telford Shopping Centre users (but not Southwater Development users), those travelling with two or more others (vs. alone) were also less likely to have perceived a positive impact.

See Appendix A (A.4.3) for detailed results.

[24] Based on univariate and multivariate regression models. The dependent variable (accessimpact_sum) has been calculated as the sum of the scores for individual modes, where 1 = easier, 0 = no change / don't know, and -1 = more difficult.

7.5. Perceptions regarding the effectiveness of specific LSTF initiatives

Finally, town centre users and residents were asked about their perceptions of the various LSTF funded sustainable transport measures (*after* survey only).

Survey respondents were asked to what extent they agreed or disagreed with a number of statements regarding the various sustainable transport interventions. To keep the questionnaire to a manageable length, the interviewer randomly selected a sub-sample of statements to ask each respondent.

To help compare responses a net agreement score has been calculated, as follows: % agreeing - % disagreeing with statement. Scores have then been colour coded as follows:

> 60% (Very high / strong net agreement)	*40% – 60% (High / strong net agreement)*	*20% - 40% (Moderate net agreement)*	*0% - 20% (Low net agreement)*	*< 0% (Net disagreement)*

In addition, the two most common responses have been highlighted in bold in Tables 15-18.

7.5.1. Overall findings

In general, the responses provided by town centre users, residents, stakeholders and focus group participants were very positive, suggesting that the various transport schemes and initiatives are achieving results in terms of attitudes and perceptions, at least.

"The town centre looks and feels better, access to the town centre is generally better, and visitors are not faced with three lanes of traffic." (TSC Manager)

7.5.2. Perceptions about the transport changes to the Box Road

There was very strong net agreement amongst both survey groups (town centre users +64%, residents +61%) that the two-way operation of the Box Road means that it is **quicker to drive to destinations** in the town centre.

Conversion of the Box Road was widely felt by stakeholders and focus group participants to have had the most significant impact on accessibility, resulting in shorter routes around the Box Road, better access to car-parks, and shorter journey times between the M54 motorway and the town centre. Access to the Forge and Wrekin Retail Parks (0.5kms from the Shopping Centre) is also perceived to be quicker. Bus users felt that the layout provided a more direct route to the bus station, resulting in shorter journey times.

However, concerns were raised about:

- *Increased queuing on St Quentin Gate – The new layout gives priority to traffic on Grange Central, resulting in queuing across the entrance to the Telford International Conference Centre and associated impacts.*
- *Congestion and stop start flow on Coach Central during peak periods, due to the number of crossings.*
- *Queues to access Red Oak and Yellow Beech car parks (not previously experienced).*

It was acknowledge that it may take time for drivers to fully get to grips with the new design, and adjust their behaviour accordingly.

There was also strong net agreement amongst town centre users (varying between +52% and +56%) and moderate to strong net agreement amongst residents (+30% to +52% across the various statements) that, the Box Road changes have created a safer environment for pedestrians, made drivers more aware of pedestrians and cyclists, and reduced the dominance of traffic in the town centre – ***creating the right conditions for more walking and cycling***.

These views were largely reflected by stakeholders and focus group participants, who felt that:

- *The new design has largely removed the merging / weaving that previously took place, providing safer conditions for crossing.*
- *Pedestrian refuges have created a safer crossing environment for pedestrians.*

- *The new lighting and more open paths have created a safer environment during the evening, particularly on Coach Central, although parts of the Box Road are still very quiet at night with few pedestrians around.*
- *The racetrack feel of the previous design has largely disappeared.*
- *There has been some reduction in the dominance of the car, although cars are still perceived as having overall priority.*

"The new arrangement has certainly helped people who used to run across three lanes of traffic. There were previously some serious accidents involving office workers." (TSC Manager)

The new environment is perceived to have initiated a step change in pedestrian access in the town centre, however, the lack of a footpath on the inside of the Box Road is felt to be a limitation.

On Coach Central, the was strong net agreement amongst town centre users (+51% to +57%) and residents (+42% to +52%) that vehicles now travel at slower speeds, some vehicles now give way to pedestrians to allow them to cross, and it is now easier for pedestrians and cyclists to cross Coach Central at street level – ***again, creating the right conditions for more walking and cycling***.

However, there is evidence of some areas of concern on Coach Central, with a notable proportion of town centre users and residents agreeing that the new shared space environment (with low kerbs and informal crossings) **is intimidating for pedestrians** (town centre users 23% agreeing, residents 24% agreeing) and **creates uncertainty for drivers** (town centre users 32% agreeing, residents 30% agreeing).

Focus group participants complemented the new environment on Coach Central and welcomed the wider pavements, the greater visibility of pedestrians, and the improved local access.

Some concerns were raised (unprompted) about the courtesy crossings, which became more significant when probed. There was a general uncertainty about how the crossings are intended to work, what their legal status is, and whether drivers would always stop. Most participants felt that more formal crossings should be introduced instead, even if this resulted in additional delay for traffic (note – most participants were car drivers). Concerns about the crossings have also been raised with Council Members.

There was little sense within the focus groups that priority is shared between different user groups, with cars retaining overall priority. Traffic flow is still high and the quieter, natural environment for pedestrians which was envisaged is not perceived to have been achieved.

"In reality cars still dominate rather than pedestrians. It's an improvement but a million miles from what was promised – a dutch-style cycle/ped friendly tree-lined boulevard." (TICC Manager)

Survey perceptions that vehicles are now travelling at slower speeds are substantiated by journey time surveys undertaken on two routes incorporating the Box Road in 2009 and 2015. Six runs were undertaken on each route in three different time periods. Speeds on Coach Central were found to have decreased by between 22% and 43%, depending on the route and time period[25].

Elsewhere on the Box Road, there is strong net agreement (town centre users +41%, residents +42%) that vehicles now travel at slower speed; and strong net agreement (town centre users +50%, residents +58%) that people are now more likely to cross the Box Road at street level rather than use the underpasses or overbridges – suggesting the scheme has been **successful in terms of reducing the severance effect of the Box Road**.

Again there is evidence of some areas of concern, with a notable proportion of town centre users and residents feeling that the **shared pedestrian/cycle routes around the Box Road create an intimidating environment for pedestrians** (town centre users 21% agreeing, residents 14% agreeing).

Survey perceptions that vehicles are now travelling at slower speeds elsewhere on the Box Road are also substantiated by journey time surveys. Speeds were found to have decreased by 25-31% on Woodhouse Central, and 19-33% on Grange Central. On Lawn Central speeds reduced in the AM Peak (12%) and Off-Peak (18%), but increased by 35% in the PM Peak.

[25] *LSTF Outcome Monitoring Report (T&W Council, March 2016).*

Table 15. To what extent do you agree or disagree with the following statements regarding the transport changes to the Box Road in general?

	Town Centre Users (Telford Shopping Centre and Southwater Development)[a]							*TSC only – Net Agreement Score[b]*	*Residents – Net Agreement Score[c]*
	Strongly agree	Agree	Neither agree or disagree	Dis-agree	Strongly disagree	Don't Know	**Net Agree-ment**		
The new two way operation on the Box Road means that it is quicker to drive to destinations in the town centre	**30%**	**38%**	9%	3%	1%	19%	**64%** (very strong)	*69% (very strong)*	*61% (very strong)*
The changes to the Box Road have created a safer environment for pedestrians and cyclists	**23%**	**37%**	15%	4%	2%	19%	**54%** (strong)	*59% (strong)*	*52% (strong)*
Drivers are now more aware of pedestrians and cyclists	**24%**	**35%**	17%	4%	2%	17%	**52%** (strong)	*54% (strong)*	*42% (strong)*
The Box Road changes are helping to reduce the dominance of traffic in Telford town centre	**23%**	**39%**	13%	5%	1%	19%	**56%** (strong)	*61% (very strong)*	*30% (mod)*

a. Sample size for all town centre users varies from 660 to 679 across the various statements.
b. Sample size for Telford Shopping Centre (TSC) only users varies from 492 to 527 across the various statements.
c. Sample size for Residents varies from 168 to 191 across the various statements.

Figure 14. To what extent do you agree or disagree with the following statements regarding the transport changes to the Box Road in general? (All Town Centre Users)

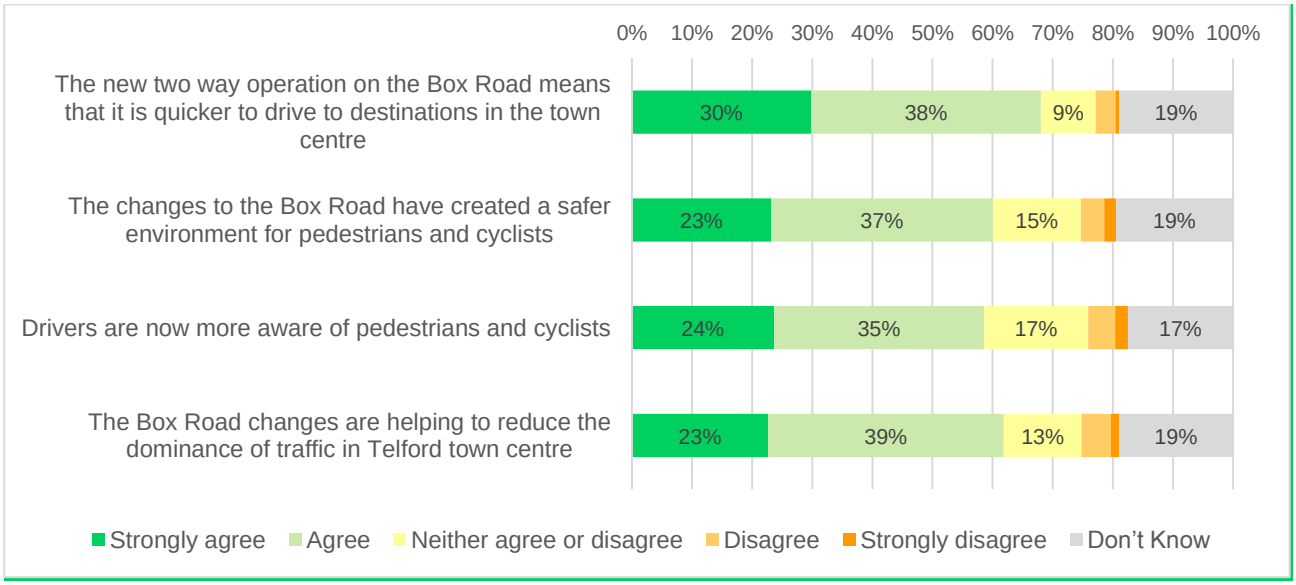


Table 16. To what extent do you agree or disagree with the following statements regarding the specific transport changes to Coach Central?

	Town Centre Users (Telford Shopping Centre and Southwater Development)[a]							*TSC only – Net Agreement Score[b]*	*Residents – Net Agreement Score[c]*
	Strongly agree	Agree	Neither agree or disagree	Dis-agree	Strongly disagree	Don't Know	**Net Agreement[a]**		
Vehicles on Coach Central now travel at slower speeds	**20%**	**38%**	15%	6%	1%	**20%**	**51%** (strong)	*59% (strong)*	*42% (strong)*
It is now easier and safer for pedestrians and cyclists to cross Coach Central at street level	20%	**41%**	12%	4%	1%	**21%**	**56%** (strong)	*60% (very strong)*	*43% (strong)*
Some vehicles now give way to pedestrians to allow them to cross	18%	**44%**	13%	5%	1%	**19%**	**57%** (strong)	*63% (very strong)*	*52% (strong)*
The new shared space environment (with low kerbs and informal crossings) is intimidating for pedestrians **(negatively framed)**	5%	17%	20%	**24%**	12%	**22%**	**-13%** (net dis-agree-ment)	*-17% (net dis-agree-ment)*	*-27% (net dis-agree-ment)*
The new shared space environment creates uncertainty for drivers **(negatively framed)**	5%	**27%**	22%	15%	6%	**25%**	**12%** (low)	*13% (mod)*	*-5% (net dis-agree-ment)*
There are now more pedestrians and cyclists on Coach Central	10%	**33%**	21%	7%	1%	**28%**	**35%** (mod)	*40% (strong)*	*38% (mod)*

a. Sample size for all town centre users varies from 583 to 610 across the various statements.
b. Sample size for Telford Shopping Centre (TSC) only users varies from 346 to 387 across the various statements.
c. Sample size for Residents varies from 148 to 171 for statements 1 to 3; 242 for statements 4 to 6.

Figure 15. To what extent do you agree or disagree with the following statements regarding the specific transport changes to Coach Central? (All Town Centre Users)

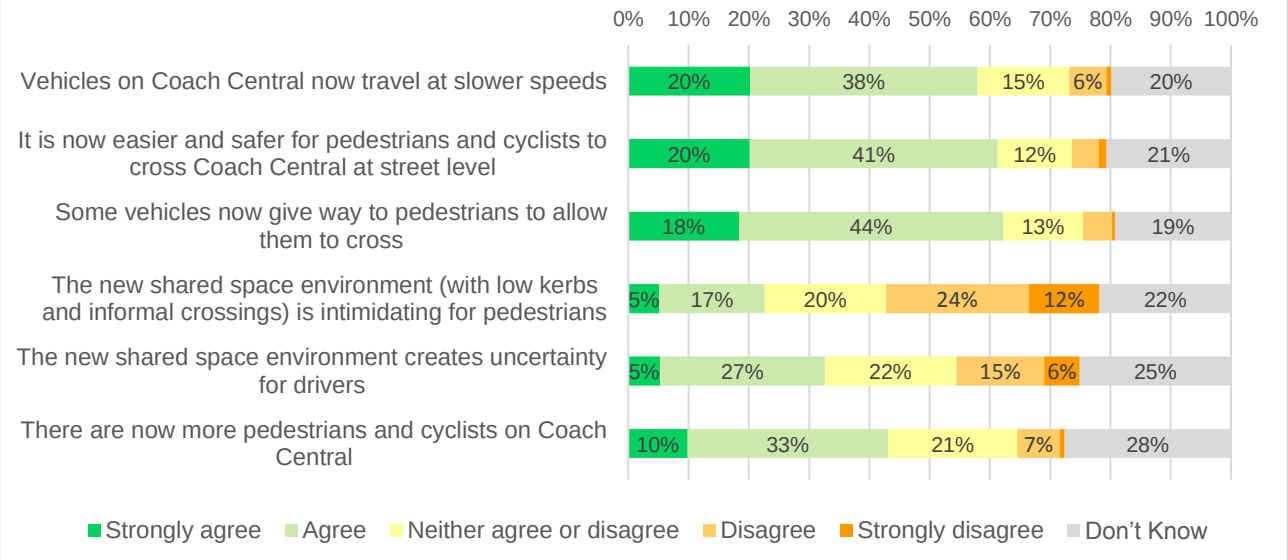
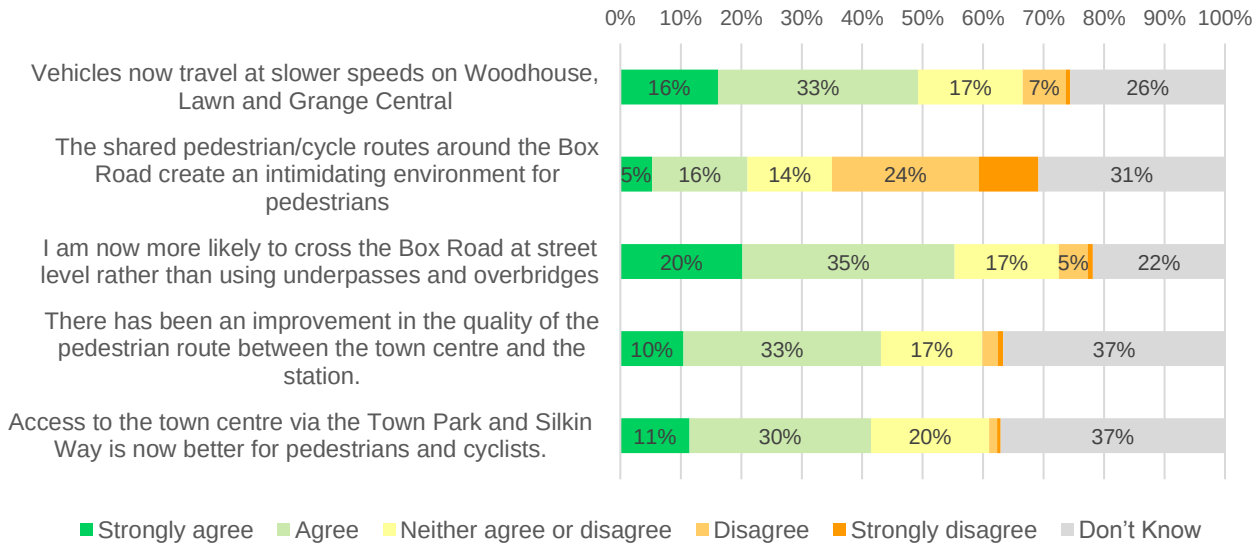


Table 17. To what extent do you agree or disagree with the following statements regarding other transport changes in the town?

	Town Centre Users (Telford Shopping Centre and Southwater Development)[a]							*TSC only – Net Agreement Score[b]*	*Residents – Net Agreement Score[c]*
	Strongly agree	Agree	Neither agree or disagree	Dis-agree	Strongly disagree	Don't Know	**Net Agreement[a]**		
Vehicles now travel at slower speeds on Woodhouse, Lawn and Grange Central	16%	**33%**	17%	7%	1%	**26%**	**41%** (strong)	*46% (strong)*	*42% (strong)*
The shared pedestrian/cycle routes around the Box Road create an intimidating environment for pedestrians **(negatively framed)**	5%	16%	14%	**24%**	10%	**31%**	**-13%** (net dis-agreement)	*-18% (net dis-agreement)*	*-36% (net dis-agreement)*
I am now more likely to cross the Box Road at street level rather than using underpasses and overbridges	20%	**35%**	17%	5%	1%	**22%**	**50%** (strong)	*56% (strong)*	*58% (strong)*
There has been an improvement in the quality of the pedestrian route between the town centre and the station.	10%	**33%**	17%	3%	1%	**37%**	**40%** (strong)	*45% (strong)*	*29% (mod)*
Access to the town centre via the Town Park and Silkin Way is now better for pedestrians and cyclists.	11%	**30%**	20%	1%	1%	**37%**	**40%** (strong)	*44% (strong)*	*49% (strong)*

a. Sample size for all town centre users varies from 590 to 609 for statements 1 to 3; 900 for statements 4 and 5.
b. Sample size for Telford Shopping Centre (TSC) only users varies from 337 to 452 across the various statements.
c. Sample size for Residents varies from 154 to 169 for statements 1 to 3; 242 for statements 4 and 5.

Figure 16. To what extent do you agree or disagree with the following statements regarding other transport changes in the town? (All Town Centre Users)



7.5.3. Perceptions about public realm changes

Responses provided by town centre users and residents regarding the **public realm benefits** of the changes to Coach Central were generally positive.

There is very strong net agreement that the changes have **helped integrate the Southwater Development with the town centre** (town centre users +75%, residents +69%); and that the **look and feel of Coach Central has improved** (town centre users +68%, residents +64%).

Focus group participants were also positive about the new design and layout, complementing the choice of materials and street furniture used which were felt to have modernised the space. However, while the general look and feel of Coach Central itself was felt to have been improved, the overall impression was felt to be diminished by the blank frontages of the Telford Shopping Centre and the shabby appearance of the bus station (due to be replaced in 2017) .

Walking and cycling links between the Telford Shopping Centre and the Southwater Development were generally felt to be good, and to have contributed to integrating to the new development into the town centre.

"The changes give the impression that SW and the TSC are integrated – which helps with the sales story, even if in reality not many pedestrians are using the new links. (TICC Manager)

Views about whether Coach Central has become **a vibrant community space** are more mixed, with very strong net agreement amongst Telford Shopping Centre users (+63%), strong net agreement amongst those interviewed in the Southwater Development, and a lower level of net agreement amongst residents (+41%). Telford Shopping Centre users are likely to have been most familiar with the pre-investment environment, and therefore most likely to have noticed a difference.

Focus group participants noted a general sense of vibrancy in Telford (during both the day and the evening) which was lacking until quite recently, perceived to be linked to the recent transport and urban realm changes. There also appeared to be a greater sense of pride in their town with a number of participants noting that Telford is now being talked about for positive reasons.

However, while Coach Central was perceived to look better there was less clarity about whether it was yet a vibrant community space: "It's still just a link road, providing a utility function. Not currently somewhere you would want to go and sit. There are better options in Southwater. However, it's a start, and the changes are likely to play more of a role as development in the area progresses[26]." (TICC Manager)

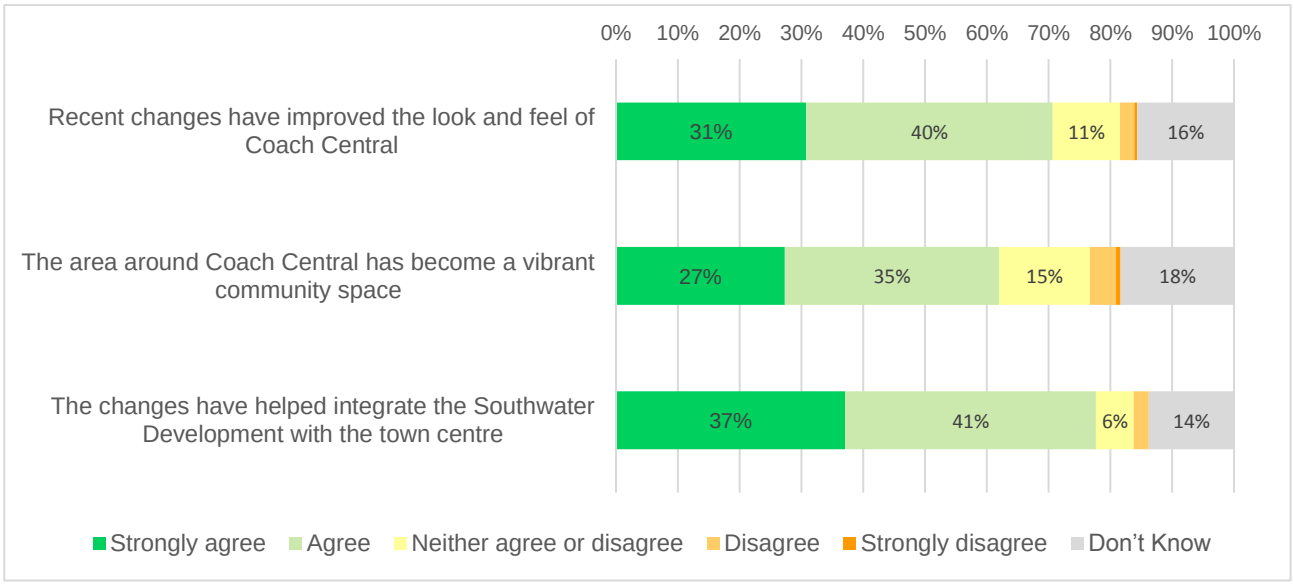
[26] As part of the redevelopment of the Bus Station, the Telford Shopping Centre is proposing a new entrance (with a tower feature) half way along Coach Central. This will help create more of an identity in the area, with the new design of Coach Central contributing to this.

Table 18. To what extent do you agree or disagree with the following statements regarding the look and feel of the town centre?

	Town Centre Users (Telford Shopping Centre and Southwater Development)[a]							*TSC only – Net Agreement Score*[b]	*Residents – Net Agreement Score*[c]
	Strongly agree	Agree	Neither agree or disagree	Dis-agree	Strongly disagree	Don't Know	**Net Agreement**[a]		
Recent changes have improved the look and feel of Coach Central	**31%**	**40%**	11%	2%	0%	16%	**68%** (very strong)	*74% (very strong)*	*64% (very strong)*
The area around Coach Central has become a vibrant community space	**27%**	**35%**	15%	4%	1%	18%	**57%** (strong)	*63% (very strong)*	*41% (strong)*
The changes have helped integrate the Southwater Development with the town centre	**37%**	**41%**	6%	2%	0%	14%	**75%** (very strong)	*81% (very strong)*	*69% (very strong)*

a. Sample size for all town centre users was 900 for each statement.
b. Sample size for Telford Shopping Centre (TSC) only users varies from 583 to 612 across the various statements.
c. Sample size for Residents was 242 for each statement.

Figure 17. To what extent do you agree or disagree with the following statements regarding the look and feel of the town centre? (All Town Centre Users)



7.5.4. Transport impacts elsewhere

Away from the Box Road, there is moderate or high net agreement that there has been an improvement in the quality of the **pedestrian route between the town centre and the station** (town centre users +40%, residents +29%); and high net agreement that access to the town centre via the Town Park and **Silkin Way** is now better for pedestrians and cyclists (town centre users +40%, residents +49%). These proportions are lower than for other statements, however, there are a high proportion of 'don't knows' and very few respondents disagreeing (4% and 2% respectively).

Focus group participants felt that the look and feel of the pedestrian route between the town centre and the station had improved. However, the TICC Manager felt that the route still provided an unattractive option for visitors, particularly in the evening when pedestrians are required to walk via a deserted office area and empty footpaths and car parks around the Box Road. As a result, the TICC often run shuttle buses to take visitors to / from the station.

Improvements to the walking and cycling paths through the Town Park and along the Silkin Way were mentioned (unprompted) by focus group participants as being particularly beneficial.

7.5.5. Differences between market groups

Telford Shopping Centre users were generally more positive than those interviewed in the Southwater Development. Early analysis suggests that the latter group includes a higher proportion of under 30s, on a lower incomes and without access to a car; and therefore potentially more sensitive to improvements affecting public transport, walking and/or cycling. In addition, Telford Shopping Centre users are likely to have been more familiar with the pre-investment environment, and therefore more likely to have noticed a difference.

Residents were less likely to agree with the various statements than those interviewed in the town centre, suggesting that they are generally less positive towards the changes or less likely to have recognised any benefits. However, the net agreement scores are generally within 10% for the two surveys, with notable exceptions relating to:

- the dominance of traffic in the town centre; and
- the shared space environment.

Residents were less convinced that the changes had reduced the dominance of traffic in the town centre, and this may continue to be a barrier for some in terms of frequency of trips and use of sustainable modes. However, they were less concerned about the new shared space environment creating uncertainty or an intimidating environment for drivers or pedestrians.

Note – the results for residents are based on a much smaller sample than those for town centre users.

Regression analysis

Regression analysis[27] undertaken using the town centre user survey data shows a number of socio-demographic and behavioural differences in how town centre users perceive the recent investment in sustainable transport measures *(statements_sum)*. Participants in full-time employment and those with access to a car or van were more likely to perceive the various initiatives positively. In contrast, those who lived more than 10 km away (vs. 0-3km), infrequent visitors (vs. very frequent visitors) and those who were travelling with one other person (vs. alone) were less likely to perceive the transport changes in a positive manner. Southwater Development users were also less likely to perceive the transport changes positively than Telford Shopping Centre users (as shown in Tables 15-18 above).

See Appendix A (A.4.4) for detailed results.

[27] Based on univariate and multivariate regression models. The dependent variable (statements_sum) has been calculated as the sum of the scores for individual statements, where -2 represents strongly disagree and +2 represents strongly agree.

7.6. Summary

General perceptions regarding access to the town centre by sustainable modes

- Town centre users and residents were first asked about their general perceptions regarding access to the town centre by sustainable modes. No specific reference was made to any of the LSTF measures at this stage.

- Respondents had mixed views regarding town centre accessibility prior to the recent investment, but generally viewed access by bus more favourably than access by foot and cycle. Perceptions were substantially higher amongst those familiar with these modes. However, a substantial number of respondents felt that they had insufficient knowledge to comment, particular regarding cycling (a third of respondents stated 'don't know).

- Comparison of before and after results shows an increase in 'don't know' responses across all modes and both surveys (up to 55% for cycling). The reason for this is unclear, but does influence the interpretation of the results. It also suggests that lack of awareness or understanding is likely to act as a barrier to the future use of sustainable modes in Telford.

- In general, **access by bus** was perceived by survey respondents to have remained the same or deteriorated over the period of the research. Nevertheless, some focus group participants felt that the new two way operation on Box Road had provided a more direct route to the bus station resulting in shorter journey times. Substantial changes were made to the bus timetable two months before the surveys were conducted, including cuts and route changes, which may have contributed to the negative perceptions amongst respondents.

- **Access by foot** was perceived to have improved amongst those familiar with walking. However, there has been little change in perceptions amongst the overall population. Focus group participants reported an improvement in access through the Town Park and on the Silken Way (both elements of the LSTF package), but felt other corridors had poor links into the town centre.

- Views regarding general **access by cycle** are mixed amongst those familiar with cycling, with town centre users reporting a significant improvement and residents perceiving access to have deteriorated. Perceptions amongst the wider population are also mixed, but show no clear evidence of an improvement. Focus group participants felt that while the recent investment has improved the environment for cyclists in the town centre, the deficiencies in the wider network mean that the point to point journey is still too dangerous for most people to consider cycling as a viable mode.

- Most capital elements of the LSTF package were concentrated in the town centre, benefiting the end points of trips only. Residents across Telford were encouraged to use active modes more, through journey planning and awareness initiatives, but these initiatives were not specifically targeted at trips to the town centre.

Experience using different modes

- Respondents who had walked to the town centre in the 12 months prior to the *before* and/or *after* survey were asked to rate the following attributes: quality of environment within the town centre, quality of routes on approaches to town centre, risk of accident, personal security, signage. None of the attributes were reported to have improved between the before and after surveys.

- These results do not reflect the outcomes expected, and do not reflect the general support for the LSTF measures presented below. However, the question is primarily focused on routes into the centre, while the majority of LSTF investment has been in the town centre itself. Furthermore, the sample sizes eligible to answer this question were very small, weakening the robustness of the results.

Awareness of recent sustainable transport schemes / initiatives

- A large majority of those interviewed in the town centre were fully or partly aware of the various changes made to the Box Road, including conversion from one-way to two-way; but were much less aware of interventions away from the Box Road, which affect a smaller proportion of town centre users.

Residents also reported high levels of awareness that there had been some (unspecified) changes made to the transport environment in the town centre.

- However, approximately half of focus group participants were unaware that the speed limit on Coach Central had changed to 20mph.

Impact of sustainable travel investment on general perceptions regarding access to the town centre by sustainable modes

- As highlighted above, comparison of before and after results regarding general perceptions of access to the town centre by sustainable modes does not show an overall improvement between the two survey periods, amongst all respondents (including don't knows). However, respondents were more positive when asked specifically "what impact have the recent transport schemes in Telford had on access to the town centre by the following modes?".

- Over half of respondents (town centre users, 59%; residents, 58%) felt that access by car had got easier, equating to a net improvement[28] of +55% and +46% respectively.

- For other modes, the majority of respondents stated 'no change' or 'don't know'. However, the remaining respondents reported a net improvement for:

  - bus (town centre users, +25%; residents, +11%);
  - foot (town centre users, +11%; residents, +24%); and
  - cycle (town centre users, +6%; residents, +16%).

Perceptions on the effectiveness of recent sustainable transport schemes / initiatives

- When asked about specific LSTF measures, town centre users, residents, stakeholders and focus group participants were generally positive, suggesting that the various transport schemes and initiatives are achieving results in terms of attitudes and perceptions, at least.

- In general, town centre users and residents (as well as stakeholders and focus group participants) agreed that the LSTF investment has:

  - improved the operation of the Box Road for traffic;
  - created a safer environment for pedestrians and cyclists, creating the right conditions for more walking and cycling;
  - improved the quality of the public realm on Coach Central; and
  - helped integrate the Southwater Development with the town centre.

- Town centre users also agreed that the changes had reduced the dominance of traffic in the town centre; but residents were less convinced on this issue, and traffic dominance may continue to be a barrier for some visitors in terms of frequency of trips and use of sustainable modes.

- Both groups (but particularly town centre users) raised concern that the new shared space environment on Coach Central is intimidating for pedestrians and creates uncertainty for drivers; with similar concerns raised about the shared pedestrian / cycle routes around the Box Road. There was little sense within the focus groups that priority is shared between different user groups, with cars retaining overall priority. These views may change with time and familiarity.

- Stakeholders noted that the network changes had resulted in queuing on certain parts of the network such as St Quinten Gate, resulting in access issues for the Telford International Conference Centre and Telford Shopping Centre.

- Views about whether Coach Central has become a vibrant community space were mixed, with residents being less convinced than town centre users.

[28] (% easier - % more difficult)

- Away from the Box Road, town centre users and residents agreed that:

  - there has been an improvement in the quality of the pedestrian route between the town centre and the station; and
  - that access to the town centre via the Town Park and Silkin Way is now better for pedestrians and cyclists.

  The level of agreement is lower than for other statements, however, there are a high proportion of 'don't knows' and very few respondents disagreeing.

- Overall, residents were less likely to agree with the various statements than those interviewed in the town centre, suggesting that they are generally less positive towards the changes or less likely to have recognised any benefits – and therefore less likely to change mode.

- Regression analysis undertaken using the town centre user survey data shows that those living more than 10 km away (vs. 0-3km), infrequent visitors (vs. very frequent visitors), Southwater Development visitors (vs. Telford Shopping Centre users) were less likely to perceive the transport changes in a positive manner. Southwater visitors include a higher proportion of under 30s, on a lower incomes and without access to a car; and therefore potentially more sensitive to improvements affecting public transport, walking and/or cycling. In addition, Telford Shopping Centre users are likely to have been more familiar with the pre-investment environment, and therefore more likely to have noticed a difference.

8. Impact – Transport Behaviour

8.1. Introduction

This chapter examines the impact that the sustainable travel investment has had on use of sustainable modes, covering:

- Modes used prior to recent investment in sustainable transport measures.
- Change in modes used to travel to the town centre, based on comparison of before and after survey responses and self-reported change in intensity of use.*
- Reasons for change in use of modes and the role of sustainable travel investment.
- Levels of walking and cycling within the town centre and on key investment corridors.

It also looks at the relationship between mode used and length of time visitors stay in the town centre.

The primary evidence sources are the town centre user survey and the residents survey; with evidence from the focus groups and stakeholder interviews used to add depth and context to the survey results. Pedestrian and cycle count data is used to examine levels of walking and cycling within the town centre and on key investment corridors.

For the town centre users, survey results are based on comparison of responses from two separate samples of respondents with different sample characteristics (see Chapter 6.3), which may influence the observed level of change. Confidence intervals (based on 95% probability) have been calculated to determine whether differences in the before and after samples represent a statistically significant difference in the wider population. Statistically significant differences are marked with an asterix (*) or ‘sig’.

For the residents survey, before and after responses are based on the same sample of residents. Any changes reported between the before and after surveys therefore represent a real change across the sample of respondents interviewed, weighted to be representative of the wider population[29]. Nevertheless, the panel of respondents do represent a sample of the population, and confidence intervals are still useful to understand how the overall response proportions compare to the true population. Confidence intervals (based on 95% probability) have therefore been calculated to determine whether real differences in the before and after samples are sufficiently large to indicate a significant change in the wider population. Statistically significant differences are marked with an asterix (*) or ‘sig’. See Section 2.3.1 for further information.

The survey questions focus on travel into the town centre. However, the LSTF measures are mainly focused around improving the pedestrian and cycling environment within the town centre, so will only influence part of respondents’ trips. Levels of walking and cycling within the town centre, and on key investment corridors are considered in Section 8.6.

Town centre users have been abbreviated to ‘tcu’ and residents to ‘res’ in some locations, in order to present the results in a clear and succinct manner.

[29] Note, however, the before and after surveys were undertaken at different points of time, and the robustness of the results relies on resondents answering in a consistent and accurate manner.

8.2. Modes used prior to recent investment in sustainable transport measures (daytime)

Results from the town centre user and residents surveys show that, prior to the recent investment in sustainable transport measures car was by far the dominant mode, followed by bus.

Levels of walking were much lower (used by 13% of town centre users and 17% of residents in the previous 12 months), with levels of cycling very low (used by 1% of town centre users and 4% of residents).

Car was also the most common mode for town centre users on the day of the survey (56%), and the main mode amongst residents (71%). Car use was higher amongst residents, who are less likely to be regular visitors to Telford.

Table 19. Modes used prior to recent investment in sustainable transport measures (before survey)

	Modes used in previous 12 months		Mode used on survey day	Main mode used
	Town centre users[1]	Residents	Town centre users[1]	Residents
Car	64%	81%	56%	71%
Bus	40%	30%	30%	18%
Walk	13%	17%	9%	9%
Cycle	0%	4%	0%	1%
Other	-	-	5%	1%
Total	100%	100%	100%	100%
Base	734	191	734	191

1. Town Centre User results based on interviews conducted in Telford Shopping Centre only.

8.3. Comparison of mode use in before and after surveys (day)

A comparison of before and after results for 'modes used in previous 12 months' provides an indication of change in mode use pre and post LSTF implementation.

Town centre users

Comparison of before and after samples shows:

- a significant increase in car use (64% *before*, 77% *after*) – with similar significant increases reported for those living within 3kms, within 5kms, and further afield;
- a significant reduction in bus use (40% *before*, 32% *after*) – mainly those living further afield, with no significant change amongst those living within 3kms or 5kms;
- a significant reduction in walking (13% *before,* 9% *after*) – due to a reduction amongst those living further afield[30], with no significant change in walking amongst those living within 3kms or 5kms; and
- no significant change in cycling overall, or by distance.

As highlighted above the two samples are based on different respondents with different characteristics. The after sample comprises a higher proportion of visitors travelling more than 10kms (reducing the attractiveness of walking and cycling); a higher proportion travelling as a group; a higher proportion spending more than 2 hours in the town centre; and are more likely to be combining shopping and leisure trips. These results suggest that change in the profile of town centre users, following the various changes in the town centre (including the Southwater Development, the changes to the transport environment, etc.) have resulted in a greater dependence on the car across town centre users, in general.

Regression analysis[31] demonstrates that the statistically significant reduction in the overall proportion walking or cycling *(DV_1)* (13% *before,* 9% *after*) and using any sustainable mode (walk, cycle, bus, train) *(DV_2)* (50% *before,* 39% *after*) is due to socio-demographic (age, access to a car) and behavioural (distance, frequency of visits, dwell time, journey purpose) differences. There is **no robust evidence to suggest that the observed decrease in sustainable mode use is due to the LSTF intervention**. See Appendix A (A.4.1 and A.4.2) for detailed regression results.

Socio-demographic and behavioural predictors of sustainable mode use are summarised in Figure 20.

Further analysis of how individual behaviour has changed is presented below, and in the following section.

Residents panel

Comparison of *before* and *after* responses from the residents survey, representing real change within a retained sample of respondents, shows marginal changes in mode use only – within 3% for all modes (car 0%, bus -1%, train +2%, walk -3%, cycle 0%); suggesting no significant change in the wider population.

A cross-tabulation of respondents' most frequently used mode *before* and *after* shows that:

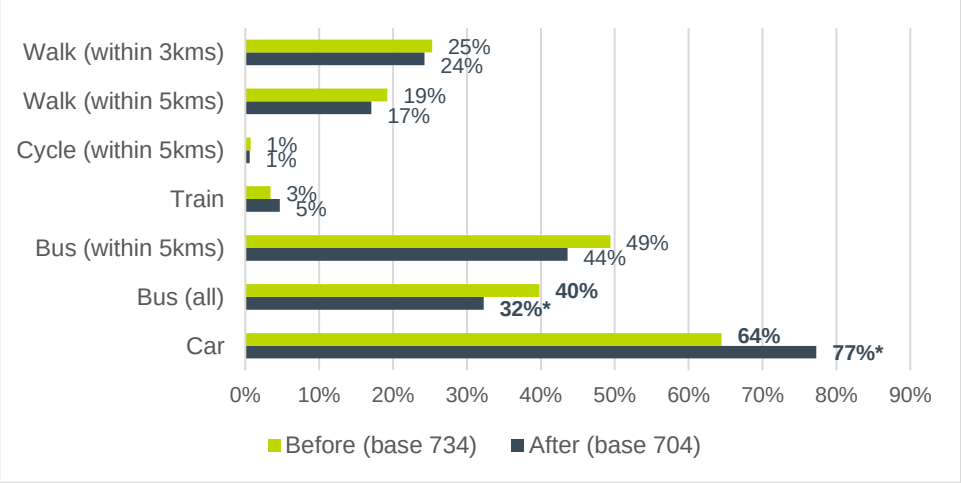
- the majority of respondents (164 residents, 86%) have not changed their mode;
- nearly all of the remaining respondents have shifted between car and sustainable modes, with a very small net shift towards sustainable modes (+3 residents):
- there has been very little shift between sustainable modes (2 respondents only).

[30] Across the whole sample, the proportion walking decreased significantly (13% *before*, 9% *after*). These respondents are expected to have walked to the town centre from another destination in Telford (e.g. office) rather than from home.

[31] Dependent variables are DV_1 (0 = have not walked or cycled in the last year; 1 = have walked or cycled in the last year) and DV_2 (0 = have not walked or cycled or used bus or train in the last year; 1 = have walked or cycled or used bus or train in the last year).

Figure 19. Modes used to travel into the town centre in the last 12 months

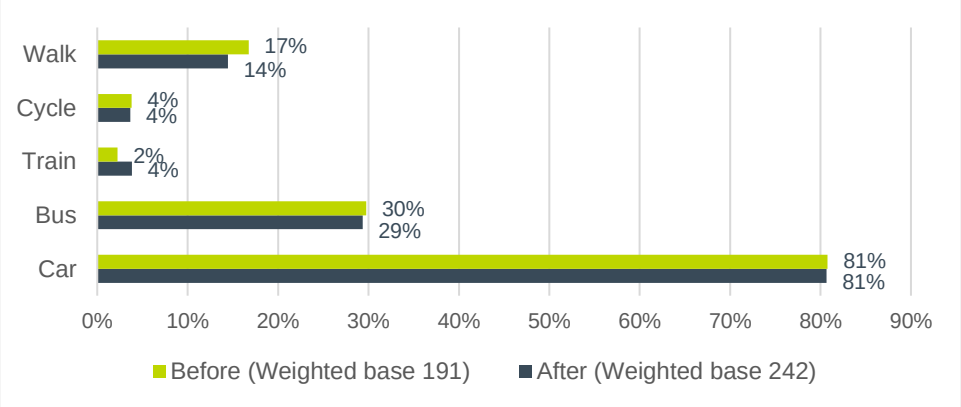
a) Town centre users (unweighted) (Telford Shopping Centre only) - No time of day specified



Significant differences in before and after results marked with asterix (*).

Other modes not shown here, but no significant differences found.

b) Residents (weighted) – Daytime only



During the before survey, 51 respondents who answered Q3 (frequency of visit) with 'visit less than once a month', 'first time', or 'don't know', were excluded from the transport questions. This approach was changed for the after survey, and the question was asked to all respondents.

Significant differences between before and after results (with respect to the wider population) marked with asterix (*).

Other modes not shown here, but no large differences found.

Figure 20. Socio-demographic and behavioural predictors of sustainable mode use in Telford

The regression results show that a number of socio-demographic and behavioural characteristics are associated with sustainable mode use for travel to Telford town centre.

- Participants who were older, had access to a car or van, lived further away, visited the town centre less frequently, travelled with two or more other people (vs. alone) and spent more time in the area on the day of the interview were less likely to have walked or cycled in the past year (in either the before or after period). In contrast, those visiting friends or relatives on the day of the interview were more likely to have walked or cycled in the past year (in either the before or after period).
- Those who worked full-time, had access to a car or van, lived more than 10 km away, visited the town centre less frequently and those who travelled with two or more others (vs. alone) were less likely to have used any sustainable mode in the past year (in either the before or after period).

See Appendix A (A.4.2) for detailed regression results.

8.4. Self-reported change in use of specific modes (daytime)

The above findings relate to the range of modes used in the 12 months prior to the before and after surveys; but do not take account of any changes in frequency or intensity with which different modes were used (including main and secondary choices). Survey respondents were therefore asked *'Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre'*. No specific reference was made to any of the recent sustainable travel measures at this stage.

Respondents were only asked about modes they had used in the last 12 months. However, the results below are presented both as a percentage of all respondents (to give an indication of the overall mode shift) and as a percentage of existing mode users.

The results are based on self-reported change amongst one set of respondents, rather than a comparison of two datasets from different points in time and (in the case of the town centre users) from different samples of respondents.

8.4.1. Amongst all respondents

The table below shows that the majority of respondents reported 'no noticeable change' or 'don't know / don't remember / don't use' (also treated as 'no noticeable change'):

- car (75% tcu, 69% res), bus (83% tcu, 87% res), walk (91% tcu, 95% res); and
- virtually 100% for train and cycle.

Table 20. Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre? (After results, all respondents)

Town centre users (unweighted) (Telford Shopping Centre only) - No time of day specified

CAPI – On-street	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	18% (5%, 13%)	10% (4%, 6%)	1% (1%, 0%)	0% (0%,0%)	3% (2%, 1%)
Less (A little less / A lot less)	7% (5%, 2%)	4% (2%, 2%)	1% (1%, 0%)	0% (0%, 0%)	2% (1%, 1%)
No noticeable change	49%	20%	2%	0%	5%
Don't use / Not applicable[2]	26%	67%	96%	100%	90%
Base[1]	**667**	**675**	**673**	**675**	**675**
Net increase (% more - % less)	**+11%**	**+7%**	**+0%**	**+0%**	**+2%**

1. First time visitors were not asked this question.

Residents panel (weighted) – Daytime only

CATI - Telephone	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	17% (8%, 9%)	10% (5%, 4%)	0% (0%, 0%)	3% (1%, 2%)	8% (6%, 2%)
Less (A little less / A lot less)	14% (8%, 6%)	8% (4%, 4%)	0% (0%, 0%)	0% (0%, 0%)	1% (1%, 1%)
No noticeable change	48%	12%	3%	1%	5%
Don't use / Not applicable[2]	21%	71%	96%	96%	86%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Base	**242**	**242**	**242**	**242**	**242**
Net increase (%more - % less)	**+3%**	**+1%**	**+0%**	**+3%**	**+7%**

2. Respondents who had not identified using the mode on day of survey or in the previous 12 months were not asked this question.

The remaining respondents reported small net increases (% more - % less) in the use of: car (+11%, town centre users), bus (+7%, town centre users), and walk (+7%, residents).

8.4.2. Amongst existing mode users

The same results are presented below, but are expressed as a percentage of specific mode users only.

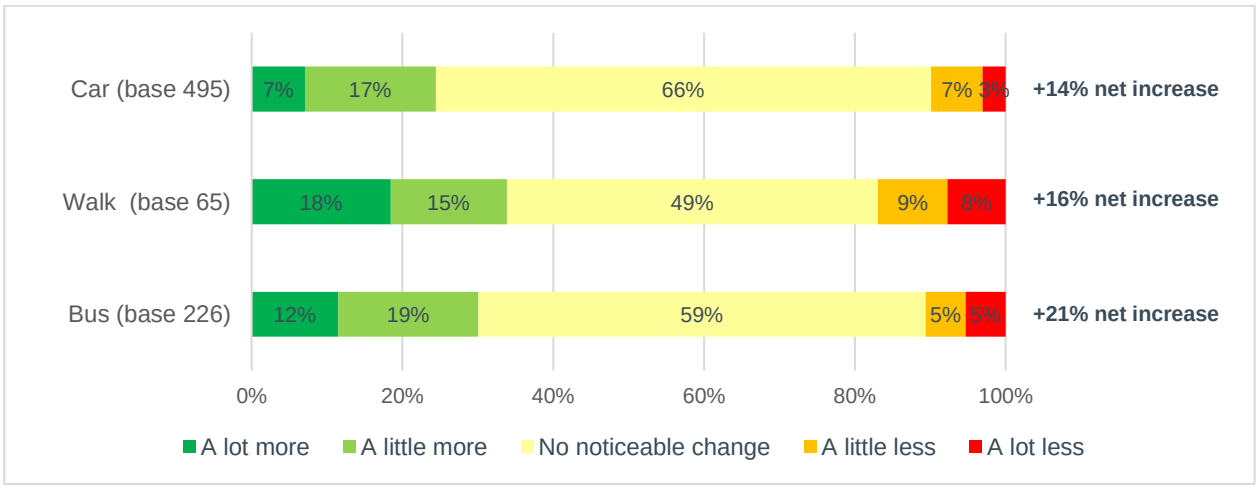
As above, the results show net increases (% more - % less) in the use of:

- car (+14%, town centre users);
- bus (+21%, town centre users); and
- walk (+46%, residents but based on small sample size; 16% town centre users).

The results suggest that those using bus and walk (and car) are doing so more frequently than previously (i.e. before the opening of the Southwater Development, the changes to the transport environment, etc). The extent to which this is because they are now making more trips, or because they have changed modes, is unclear – but is likely to be due to a combination of these factors.

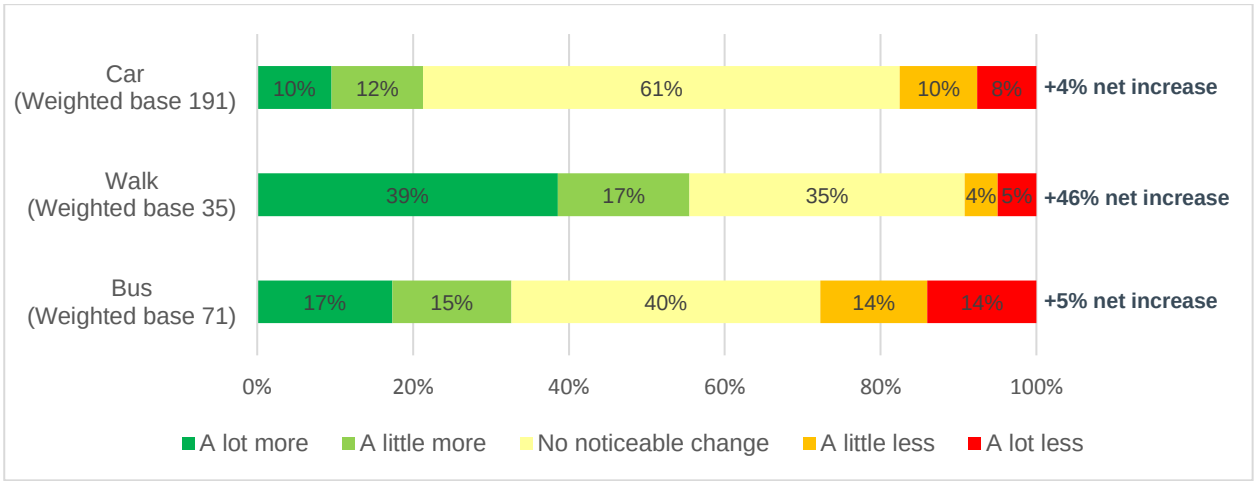
Figure 21. Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre? (After results, mode users only)

Town centre users (unweighted) (Telford Shopping Centre only)



Sample size for train and cycle too small to provide meaningful results.

Residents panel (weighted)



Sample size for train and cycle too small to provide meaningful results.

By distance - Analysis of the town centre user results by distance, shows that:

- the net proportion walking more is highest amongst those living within 3kms, as expected (+27%, vs. -27%);
- the net proportion using bus more is broadly similar for those living within 5kms and those living further afield (+20% vs. +23%); and
- the net proportion using car more is highest amongst those living more than 3kms from the town centre (+17%, vs +2%).

Comparison with before results - Corresponding results from the *before* survey, show a more stable trend in terms of mode use prior to the recent changes in the town centre. Significantly more town centre user respondents reported no noticeable change in use of bus and walk:

- bus (80% town centre users; 68% residents*);
- walk (80% town centre users; 70% residents*).

A similar trend was also evident in the residents sample.

Table 21. Change in frequency of mode use compared with a year ago – Before and after comparison

	Town centre users				Residents			
	Bus		Walk		Bus		Walk	
	Before	After	Before	After	Before	After	Before	After
A lot more	8%	12%	**5%**	**18%***	4%	17%	3%	39%
A little more	**5%**	**19%***	10%	15%	7%	15%	16%	17%
No noticeable change	**80%**	**59%***	**80%**	**49%***	68%	40%	70%	35%
A little less	6%	5%	3%	9%	12%	14%	10%	4%
A lot less	2%	5%	2%	8%	9%	14%	0%	5%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Base	**292**	**226**	**93**	**65**	**57**	**71**	**32**	**35**

Car not covered in before questionnaire

Significant differences in before and after results for town centre users marked with asterix (*)

Town Centre User results based on interviews conducted in Telford Shopping Centre only.

8.5. Reasons for change in use of modes and the role of sustainable travel investment.

8.5.1. Specific reasons for change in use of modes

Survey respondents who reported that they were walking or cycling more were asked why they were using these modes more.

The sample sizes are too small to provide robust results, but give an indication of the possible drivers:

- Of the 25 town centre users providing a main reason for walking more:
  - 5 said “It’s better for my health and fitness”; and
  - 5 said “New routes and crossing facilities have made this mode more attractive (e.g. safer, more convenient, etc.)”.

- Of the 19 residents providing a main reason for walking more:
  - 7 said “It’s better for my health and fitness”.

Changes in circumstances and other miscellaneous reasons were the most common response (10 town centre users, 16 residents).

A number of focus group participants commented that they are now using their car more for trips to the town centre due to the introduction of two-way operation on the Box Road, which has improved access to town centre destinations. This is reflected in the results presented below.

One local community representative suggested that the changes may have actually encouraged a shift from walking to car use for some short trips (e.g. from neighbouring Hollinswood). Walking was previously considered to provide a faster option than the car due to the circuitous route which was required around the one-way system. With the new two way operation, car journey times have reduced making this a more attractive option, particularly for residents ‘popping to the shops’ for a short duration and given the availability of free parking at Asda. This may offset some of the mode shift benefits which have been predicted.

However, the same stakeholder also commented that numbers walking from Hollinswood into the centre appear to have increased. The Town Park / Southwater Development improvements mean that residents have a reason to stay out for longer and visit the town centre more frequently, and the Box Road Scheme and Southwater Development has made the Town Park more accessible. Residents are more likely to walk for these trips than pay to park the car.

8.5.2. Impact of LSTF investment on change in use of modes

All *after* respondents were then asked 'As a result of the recent transport schemes in Telford, to what extent do you use the following modes of travel more or less, for trips into the town centre'.

The responses are presented below, firstly as a percentage of all respondents, and secondly as a percentage of existing users of the mode concerned only.

Amongst all respondents

Table 22. As a result of the recent transport schemes in Telford, to what extent do you use the following modes of travel more or less, for trips into the town centre?

Town centre users (unweighted) (Telford Shopping Centre only)

	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	20% (4%, 16%)	11% (4%, 7%)	2% (1%, 1%)	1% (0%,1%)	5% (2%, 3%)
No noticeable change	55%	28%	9%	6%	14%
Less (A little less / A lot less)	5% (4%, 2%)	3% (2%, 1%)	1% (0%, 1%)	0% (0%, 0%)	1% (1%, 1%)
Don't know / Don't remember	0%	0%	1%	1%	1%
Don't use	19%	59%	87%	91%	78%
Total	100%	100%	100%	100%	100%
Base[1]	675	675	675	675	675
Net increase (%more - % less)	**+15%**	**+8%**	**+1%**	**+1%**	**+4%**

1. First time visitors were not asked this question.

Residents panel (weighted)

	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	19% (7%, 12%)	12% (5%, 6%)	3% (1%, 1%)	4% (1%, 3%)	20% (9%, 11%)
No noticeable change	58%	24%	16%	13%	21%
Less (A little less / A lot less)	10% (2%, 8%)	8% (3%, 4%)	3% (2%, 1%)	2% (1%, 2%)	4% (2%, 2%)
Don't know / Don't remember	2%	0%	0%	0%	1%
Don't use	11%	57%	78%	81%	54%
Total	100%	100%	100%	100%	100%
Weighted base[1]	242	242	242	242	242
Net increase (%more - % less)	**+9%**	**+4%**	**-1%**	**+2%**	**+16%**

Amongst existing mode users

The following results have been filtered for the respondents who actually used the mode in question for travel to the town centre in the previous 12 months – to provide compatibility with the results presented in Figure 21 (see Section 8.4.2).

Table 23. As a result of the recent transport schemes in Telford, to what extent do you use the following modes of travel more or less, for trips into the town centre? (Filtered by respondents who reported using the mode in question)

Town centre users (unweighted) (Telford Shopping Centre only)

CAPI – On-street	Car	Bus	Walk
More (A lot more / A little more)	26% (5%, 21%)	27% (11%, 16%)	37% (17%, 20%)
Less (A little less / A lot less)	7% (5%, 2%)	7% (4%, 3%)	9% (5%, 5%)
No noticeable change	66%	63%	51%
Don't know	1%	2%	3%
Total	100%	100%	100%
Base	495	226	65
Net increase (%more - % less)	**+20%**	**+20%**	**+28%**
Corresponding net increase from previous question (without reference to recent transport schemes)	**+14%**	**+21%**	**+16%**

Residents panel (weighted)

CATI – Telephone	Car	Bus	Walk
More (A lot more / A little more)	22% (8%,14%)	37% (18%,19%)	57% (34%, 23%)
Less (A little less / A lot less)	10% (2%, 8%)	18% (8%, 10%)	10% (7%, 2%)
No noticeable change	65%	42%	33%
Don't know	3%	3%	0%
Total	100%	100%	100%
Base	195	71	35
Net increase (%more - % less)	**+12%**	**+18%**	**+48%**
Corresponding net increase from previous question (without reference to recent transport schemes)	**+4%**	**+5%**	**+46%**

For most modes, the change is broadly similar to that reported above in Figure 21 (Section 8.4.2), with net increases in use of:

- car (+20% tcu, +12% res), bus (+20% tcu, +18% res), and walk (+28% tcu, +48% res).

The results highlight some inconsistencies in the responses given to this and the previous question. Some respondents reported that they had used a particular mode more frequently in the past 12 months as a result of the recent transport investment (.e. +18% net for residents using bus), but reported a lower level of use in general (only +5% net said that they were using bus more overall. *This is the opposite way round to a logical outcome.*

In addition, some respondents stated that they had not used a particular mode in the last 12 months, but then responded that they had used the mode more frequently in recent years, either generally or as a result of the recent transport schemes. *This suggests an inconsistency in reporting of change of mode use, or that the respondents previously used the mode in question, but more than 12 months ago.*

Nevertheless, despite the above caveats, the results, the findings do suggest that the recent transport changes have resulted in increased intensity of use:

- car (particularly amongst town centre users);
- bus (particularly amongst town centre users); and,
- walk (particularly amongst residents).

Telford Shopping Centre vs. Southwater Development

Comparison of results for those interviewed in different parts of the town centre show similar net increases in use of car (+20% for TSC, +18% for Southwater), and walk (+28% for TSC, +24% for Southwater). However, Southwater Development visitors reported very little change in use of bus (+1%), compared with +20% net increase amongst Telford Shopping Centre users (a statistically significant difference).

8.5.3. Impact of awareness and perceptions of LSTF investment on use of sustainable modes

Regression analysis, using town centre user data (after survey only) has been used to examine awareness and perceptions of LSTF measures on use of sustainable modes. Three potential independent variables were considered:

- Awareness of individual sustainable transport initiatives *(awareness_sum)* (see Section 7.3).
- Impact of sustainable travel investment on access to the town centre in general (easier, no change / don't know, more difficult; *accessimpact_sum*) (Section 7.4).
- Perceptions regarding the effectiveness of sustainable transport initiatives *(statements_sum)* (Section 7.5).

These variables were modelled against three indicators of mode use: use of walking and cycling in the past year (*DV_1,* Section 8.3), use of sustainable modes in the past year (*DV_2,* Section 8.3), and self-reported change in use of sustainable modes as a result of recent transport investment (*DV_3,* Section 8.5.2).

- *Awareness of the LSTF schemes* – This was a significant univariate predictor of having walked or cycled in the past year *(DV_1)*, having used any sustainable mode *(DV_2)*, and reporting an increase in frequency of sustainable mode use as a result of the recent transport schemes *(DV_3)*, across the total sample. **Those who were aware of the LSTF schemes were more likely to have used sustainable modes as a result of the transport schemes than those who were unaware, and to have reported using sustainable modes more often as a result of the recent transport investment.**

  There were no significant differences in these relationships between Telford Shopping Centre and Southwater respondents.

- *Perceived impact of LSTF interventions on town centre access (easier, no change or more difficult)* – This was also a significant univariate predictor of having walked or cycled *(DV_1)*, having used any sustainable mode *(DV_2),* and reporting a change in frequency of sustainable mode use *(DV_3)*, across the total sample. **Participants who perceived a more positive impact were more likely to have used sustainable modes than those who perceived access to have got more difficult, and to have reported using sustainable modes more often as a result of the recent transport investment.**

  However, further subgroup analysis showed that there was no effect of perceived impact on 'any sustainable mode use' among Southwater Development users, despite an effect in the total sample.

- *Perceptions regarding effectiveness of LSTF measures* – This was not a significant univariate predictor of having walked or cycled *(DV_1),* or having used any sustainable mode in the last year *(DV_2)*. However, there was a small, positive impact on reported change in frequency of sustainable mode use *(DV_3)*, i.e. **respondents who perceived the recent transport changes more positively were more likely to have reported using sustainable modes more often as a result of the recent transport investment.**

  There was a small difference in the effect between Telford Shopping Centre and Southwater respondents, but this may not be meaningful in practical terms.

In addition, general perceptions of ease of walking and cycling *(easy_walkcycle_sum)* was a strong significant predictor of walking or cycling. Those who perceived walking and cycling to be easier were more likely to have walked or cycled in the past year (in either the before or after period). Similarly, those who believed it was easier to use any of the sustainable modes *(easy_walkcyclebus_sum)* were more likely to have used any of these modes in the past year (in either the before or after period).

See Section A.4.3 for further information.

8.6. Levels of walking and cycling within the town centre and on key investment corridors

8.6.1. Primary data collection approach

Pedestrian and cycle video counts were undertaken on Coach Central (Site 1, before counts only) and Woodhouse Central (Site 2, before and after counts) (Figure 22) covering the following periods:

- between 10th and 17th May 2014 – prior to the commencement of most of the LSTF capital works in the town centre; and
- between the 19th and 26th September 2015 – six months after the completion of the majority of capital works in the town centre[32].

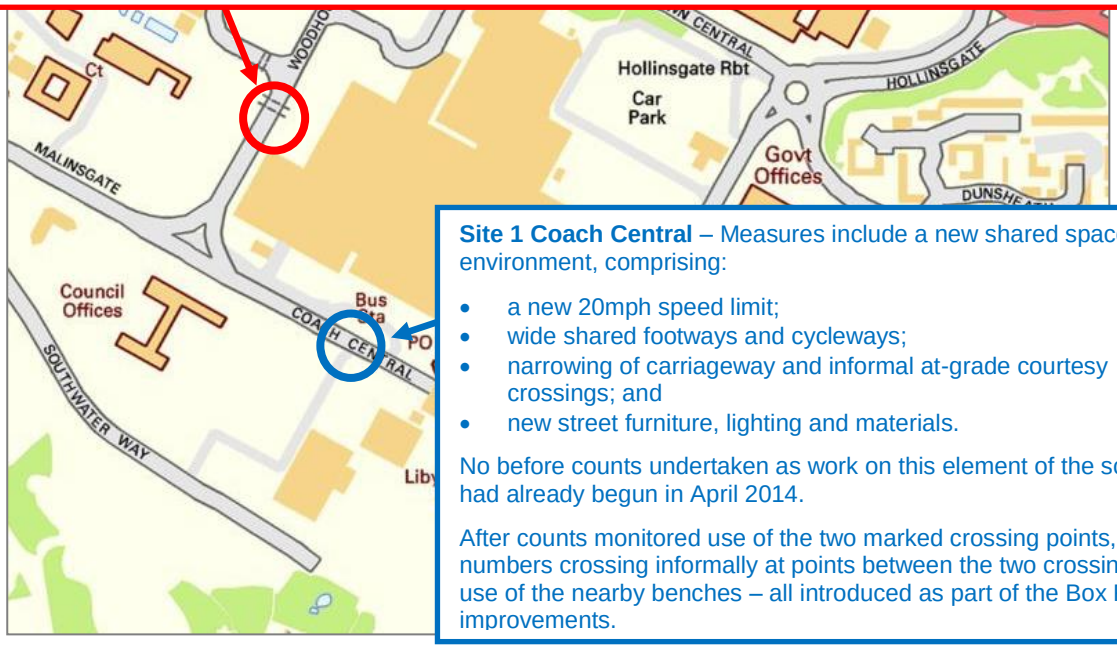
Both periods covered 5 weekdays and 2 Saturdays, with counts undertaken between 9am and 6pm to capture those visiting the town centre for retail, service or leisure purposes. The count sites were chosen to monitor those accessing town centre destinations on foot or cycle, using routes affected by LSTF measures. The specific locations were discussed and agreed with Telford & Wrekin Council LSTF team.

Figure 22. Pedestrian and cycle video counts in Telford town centre

Site 2 - Woodhouse Central – Measures include:

- shared pedestrian / cycleways located next to the highway (rather than set back behind vegetation) to create a more conventional town centre environment, remind drivers that slower speeds are more appropriate in a town centre environment, and make pedestrians and cyclists more visible;
- narrowing of carriageway, provision of central reservations and street level crossings (providing an alternative to the underpass); and
- new street furniture, lighting and materials.

After counts monitored use of the shared use path next to the highway (Site 2A) and the new street level courtesy crossing (Site 2B).



Site 1 Coach Central – Measures include a new shared space environment, comprising:

- a new 20mph speed limit;
- wide shared footways and cycleways;
- narrowing of carriageway and informal at-grade courtesy crossings; and
- new street furniture, lighting and materials.

No before counts undertaken as work on this element of the scheme had already begun in April 2014.

After counts monitored use of the two marked crossing points, the numbers crossing informally at points between the two crossings, and use of the nearby benches – all introduced as part of the Box Road improvements.

The counts were intended to monitor **use of the new walking and cycling infrastructure**, rather than provide a direct before and after comparison of overall levels of walking and cycling.

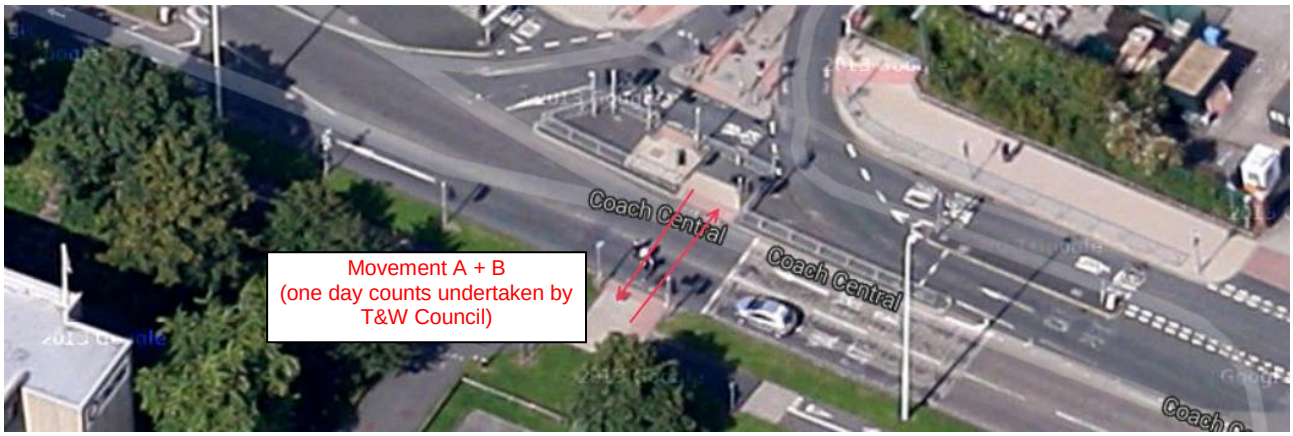
[32] The study timescales meant that it was not possible to wait until May 2016 for the after counts; so counts were undertaken in September instead. Automatic continuous count (ACC) data collected across Surrey shows that cycle flows in mid-September are typically similar (but marginally lower) than those in mid-May - but will be subject to yearly variation. Similar benchmarking data is not available for Telford.

8.6.2. Pedestrian and cycle activity on Coach Central

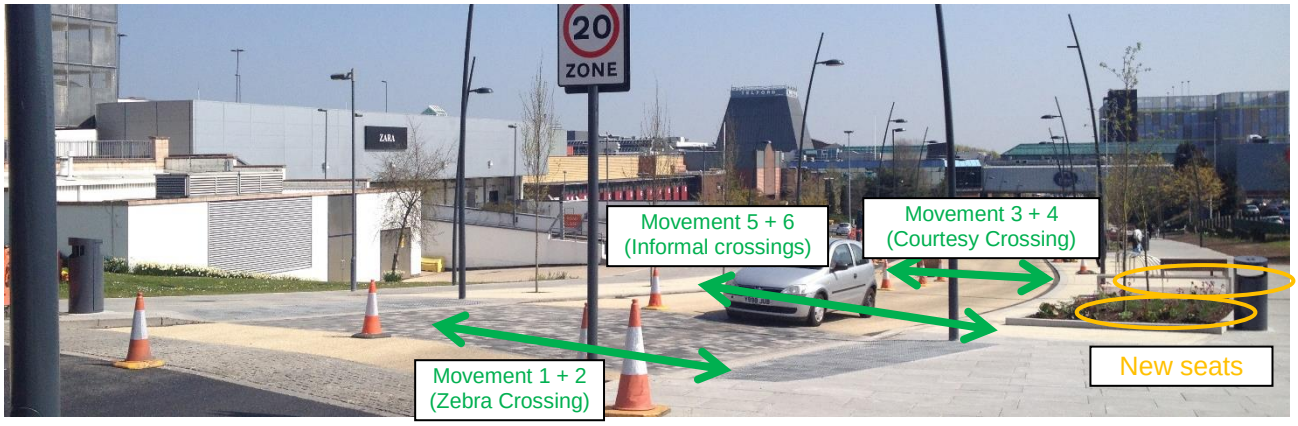
The detailed location of count sites on Coach Central are shown in Figure 23b.

Figure 23. Coach Central – Count locations

a) Before period - Signal controlled crossing pre LSTF works



b) After period - New crossings and street furniture



**Note – The above photo was taken prior to the zebra crossing being implemented.*

As part of the LSTF works, the existing signal controlled crossing (Figure 23a) was removed and replaced by a zebra crossing and an additional informal 'courtesy' crossing[33] nearby (Figure 23b). During the *after* period, the following movements were counted:

- Movements 1 and 2 – Pedestrians / cyclists using the zebra crossing opposite House of Fraser*.
- Movements 3 and 4 – Pedestrians / cyclists using the courtesey crossing opposite Zara / Bus Station.
- Movements 5 and 6 – Pedestrians / cyclists crossing informally at any point in between the two crossings.
- The number of individuals sitting on the two benches located between the two courtesy crossings (with counts undertaken every 10 minutes).

<u>Pedestrian and cycle activity in the town centre (post investment)</u>

- The total number of pedestrians and cyclists counted crossing this area of Coach Central during the daytime shopping period (9am-6pm) was 1742 per day on weekdays and 2261 per day on Saturdays.

- Activity levels drop substantially in the evening (6pm-9pm), to 177 per day on weekdays and 238 per day on Saturdays.

[33] Courtesy crossings are not official pedestrian crossings. Distinctive paving is used identify points at which pedesrians will be crossing and to indicate locations where drivers can stop safely to allow pedestrians to cross.

- The numbers of cyclists counted was very low: 10 per day on weekdays and 15 per day on Saturdays. **Cyclists therefore account for less than 1% of the active mode activity in the area.**

- The weekday daytime average in September 2015 (1366 crossing at the zebra crossing, 1743 in total) is substantially higher than the one day counts (7:30am-6pm) undertaken by T&W Council prior to the works commencing. These recorded 985 pedestrians in June 2012 and 722 pedestrians in June 2013 at the site of the previous signalised pedestrian crossing (Movement A and B).

  There are a number of potential explanations for this increase (but insufficient evidence to determine which have been the most significant), including:

  - the opening of the new Asda store, with shoppers parking at Asda and combining their supermarket trip with a visit to the Shopping Centre (and vice versa);
  - new trips between the Southwater Area (not open in 2012/2013) and the Shopping Centre, with some choosing to access these areas by crossing Coach Central at grade rather than via the Shopping Centre overbridge;
  - more Shopping Centre visitors parking on Coach Central rather than elsewhere on Box Road; and
  - more walking trips to/from the town centre.

  While the main drivers (including the potential role of the LSTF measures) are unclear, the video count data does suggest that there are now a lot more pedestrians in this part of the Box Road, interacting with the new environment and deriving associated amenity benefits.

  This finding is supported by results from the town centre user and residents surveys which show moderate net agreement *with the statement "There are now more pedestrians and cyclists on Coach Central" (town centre users 35%, residents 40%.*

  The town centre user survey also shows that the overbridge is still the preferred means of crossing Coach Central (59% of respondents had used the overbridge on the day of survey, compared with 28% crossing at grade). This is not surprising as it provides the most direct route between the Southwater Development and nearby car-parks and the Shopping Centre, during the day. However, a number of people are crossing at street level on Coach Central, and are benefitting from the new environment, deriving amenity and safety benefits. Informal crossing facilities at street level on Coach Central are likely to become more important in future years, following the completion of the Southern Quarter development and the improvement of the street level entrance to the Shopping Centre.

Effectiveness of LSTF measures

- The majority of pedestrians (78% weekdays, 80% Saturdays) are crossing via the zebra crossing. Only a fifth of pedestrians (20% weekdays, 19% Saturdays) are using the courtesy crossing, and only a very small number (1%) are crossing in-between, suggesting that **Coach Central is not currently functioning as a fully shared space environment where pedestrians feel safe crossing at any location**.

  A higher proportion of pedestrians use the courtesy crossing (rather than zebra crossing) during the evening – possibly because traffic flow is lower and it is easier to cross.

  As set out in Chapter 7, the town centre user and residents surveys *provide evidence of some areas of public concern on Coach Central, with a small but notable number of respondents agreeing that the new shared space environment (with low kerbs and informal crossings) is intimidating for pedestrians (town centre users 23%, residents 24%). However, there was* strong net agreement *(town centre users 50%, residents 58%) with the statement, 'I am now more likely to cross the Box Road at street level rather than using the underpasses and overbridges'.*

- Nevertheless, the courtesy crossing (opposite Zara) provides **a shorter and safer route than would previously have been possible**, currently benefitting around 400-500 pedestrians a day.

- Use of the benches is low on weekdays (11 per day), but higher on Saturdays (27 per day). However, the benches are not purely functional; they also help create a sense of a community space.

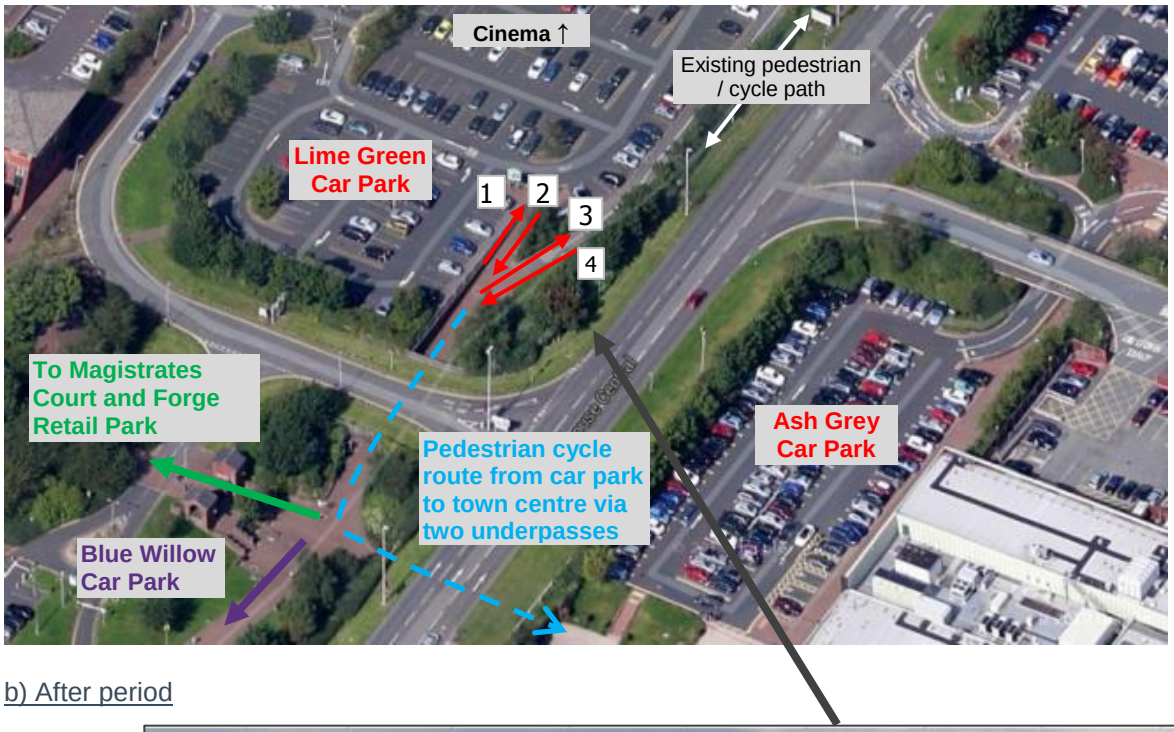
- On both weekdays and Saturdays, pedestrian numbers drop to low levels after 7pm, suggesting that **this is not yet a key route for pedestrian access to Southwater**. One might expect the evening pedestrian count to be higher on Saturdays if substantial numbers were walking to Southwater.

8.6.3. Pedestrian and cycle activity on Woodhouse Central Shared Use Path

The detailed location of count sites on Woodhouse Central are shown in Figure 24.

Figure 24. Woodhouse Central – Count locations (shared use path)

a) Before period



b) After period

The new shared pedestrian / cycle path was introduced to transfer and soften the car dominated road environment, contribute to making the town centre more attractive for pedestrians and cyclists; and 'future proof' potential longer term development of the town centre. Following the development of Telford Shopping Centre Northern Hub, a footpath will be added around the inside of the Box Road increasing the likelihood of local pedestrian/cycle movements around the Box Road.

The 'old' pedestrian / cycle path on Woodhouse Central (screened by vegetation) has been retained, and continues to provide a convenient pedestrian / cycle route to the shopping centre, via the underpass.

Effectiveness of LSTF measures

- The total number of pedestrians using the new Shared Use Path (9am to 6pm) is **low**; typically 157 per day on weekdays and 103 per day on Saturdays (in September 2015).

  Pedestrian flows in 2014 on the old pedestrian and cycle path were more than double, those counted on the new Shared Use Path in September 2015. Although flows were not counted on the old path in 2015, the results suggest that **some pedestrians (up to half) have transferred to the new route; but a substantial number are continuing to use the old path**. It is also possible that the new shared use path is encouraging more pedestrians overall to walk along this section of the Box Road.

- The total number of cyclists using the new Shared Use Path is **very low**; typically 25 per day on weekdays and 18 per day on Saturdays. Cyclists account for 14% of the total pedestrian and cycle count.

  The numbers and proportions are similar to those recorded in 2014 on the old path. The results suggest that **the works have not resulted in large increases in cyclists on this section of the Box Road to date**, but it is difficult to draw further conclusions given the data available.

- Further examination of the data suggests that **the new and old paths are catering for different movements**:

  - The new Shared Use Path runs along Woodhouse Central and is appears to be used by pedestrians wishing to walk around the Box Road to visit various destinations. Peak use occurs on weekday lunchtimes, and is believed to reflect office workers visiting the town centre during their lunch hour (e.g. from the offices located on Lawn Central). For these trips, both the new and old paths provide convenient routes.

  - The old path provides more direct access between Lime Green Car Park and Telford Shopping Centre (via the two underpasses). Peak use occurs mid-afternoon on Saturday, and is believed to represent shoppers returning to the car-park at the end of their visit. The profile of pedestrian movements on the new path on Saturdays is much flatter than that recorded on the old path in 2014; and in general, use of the new path is lower on Saturdays than during the week – assumed to reflect the absence of office workers from Lawn Central area.

- *Results from the town centre user survey show that only 4% of those interviewed had used the shared cycle/pedestrian path around the Box Road; confirming the low level of use. It is not clear whether these respondents were referring to the new or old path.*

  The survey results also show that a small but notable number feel that ' the shared pedestrian/cycle routes around the Box Road create an intimidating environment for pedestrians' (town centre users 21%, residents 14%). .

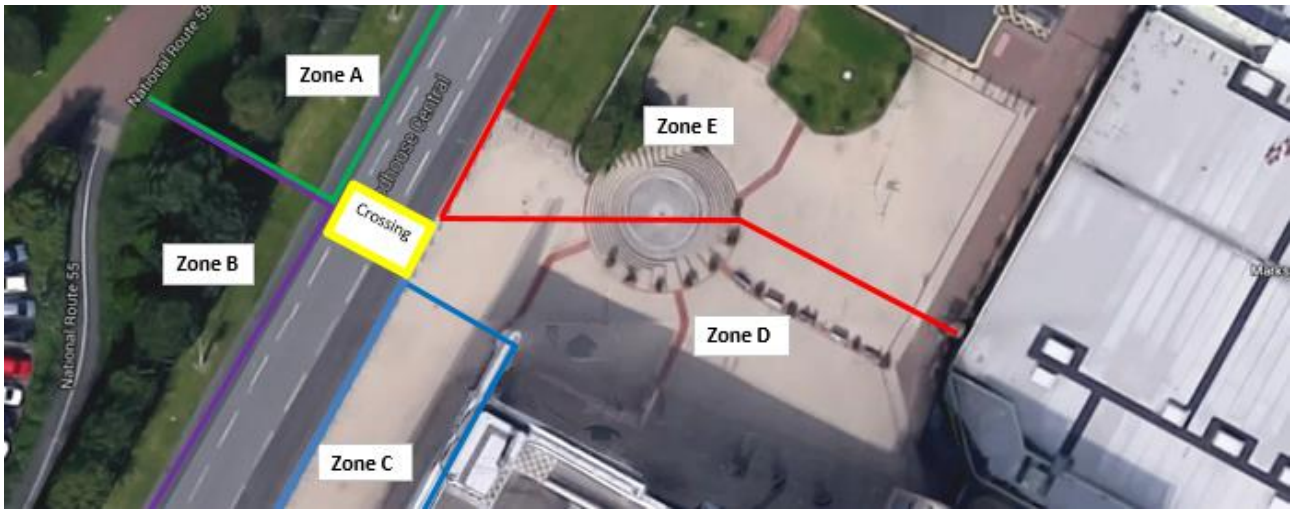
- In the short-term it is expected that pedestrian / cycle movements along Woodhouse Central will be low – for many trips during the day it is easier to walk through the shopping centre. However, **changes to the road environment are part of a longer term objective to increase levels of cycling in Telford (to the town centre and more generally), and create a more pedestrian friendly environment to support future development around the Box Road**.

8.6.4. Pedestrian and cycle activity on Woodhouse Central Crossing

The detailed location of after count sites on Woodhouse Central street-level crossing are shown in Figure 25.

Figure 25. Woodhouse Central – Count locations (street level crossing)

After period



Effectiveness of LSTF measures

- The total number of pedestrians using the new crossing was 95 per day on weekdays and 146 on Saturdays. The majority are travelling to/from Zone A (i.e. the new Shared Use Path leading to Lawn Central) and Zone D (the Telford Shopping Centre). A lack of comparable baseline information for those crossing at grade means that a direct before and after comparison is not be possible, however, the previous road design (three lanes of fast one-way traffic, with no central reservation) meant that numbers crossing 'at grade' were very low and those choosing to do so were crossing 'at risk'. **Those now crossing at grade are doing so in a safer environment.**

- It is not possible to determine from the video count data, how many pedestrians are continuing to use the underpass instead[34]. However, the data can be compared against one day counts undertaken in the 'underpass from Lime Green Car Park and the cinema' by Telford & Wrekin Council since 2011, based on the assumption that a high proportion of these individuals will also be using the underpass below Woodhouse Central. This comparison suggests that **the majority of pedestrians (approximately 4 out**

[34] *Those using the underpass are included in the Zone E count (1936 on weekdays, 3063 on Saturdays); but Zone E also includes those walking from Ash Grey Car Park (on the inside of the Box Road) and these individuals are believed to account for the majority of the Zone E count.*

of 5) are continuing to use the underpass below Woodhouse Central (based on up to 450 using the underpass below Woodhouse Central in June 2015 and 95 crossing at grade in September 2015).

- The total number of cyclists using the new crossing is very low; just 5 on a weekday and 8 on a Saturday. These figures are comparable with the very low numbers observed crossing Coach Central; again suggesting that **the number of people cycling to the shopping centre is virtually non-existence.**

- As highlighted in the previous section, **the underpass below Woodhouse Central continues to provide a convenient option for crossing Woodhouse Central**, particularly for shoppers to/from the car parks on the outside of the Box Road; **and in the short term numbers crossing at street level are expected to remain low.**

- *While the questionnaire surveys show* strong net agreement *(town centre users 50%, residents 58%) with the statement, 'I am now more likely to cross the Box Road at street level rather than using the underpasses and overbridges'; this is only likely to be the case if crossing at grade provides a more convenient option.*

8.6.5. Pedestrian and cycle activity on Silkin Way and in Town Park

Telford Town Park is at the southern end of the upgraded Silkin Way. The majority of LSTF works on the Silkin Way Multi-User Route (from the town centre through the Town Park to Ironbridge WHS) were completed by March 2014. The existing route was widened and resurfaced along the entire 7 mile stretch, links and signs into the Town Park from adjacent neighbourhoods (e.g. Malinslee, Randlay, and Stirchley) were improved, and signage and access to Ironbridge WHS was also upgraded. The Cycle Hub in the Town Park opened in 2013.

Telford Town Park has also benefited from £3m Heritage Lottery funding to improve trails, footpaths and signage as part of the Parks For People project; as well as a new Visitors Centre, a high ropes course, crazy golf, and creation of an outdoor arena area for concerts and major events.

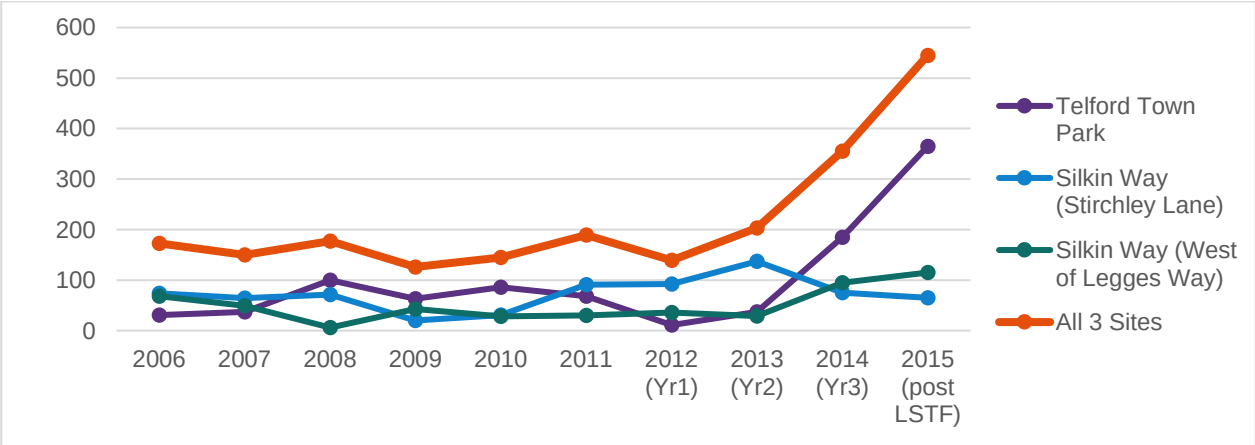
Effectiveness of LSTF measures

- Figure 26 shows evidence of a large **increase in cycle activity in the Town Park**, from less than 100 per day between 2006 and 2013, to 185 in 2014 and 365 in 2015.

- Pedestrian activity has also increased in between 2013 and 2015, returning to the levels observed between 2008 and 2010 following a drop in activity between 2011 and 2013.

- There is also some evidence of an increase in pedestrian and cycle flow on the section of the Silkin Way to the west of Legges Way (5kms from the town centre); but not a Stirchley Lane (2.5kms from the town centre).

Figure 26. Number of cyclists counted on Silkin Way (Upgraded Section) and in Town Park



Source: Telford & Wrekin Council One Day (12 hr) Counts undertaken in June each year.

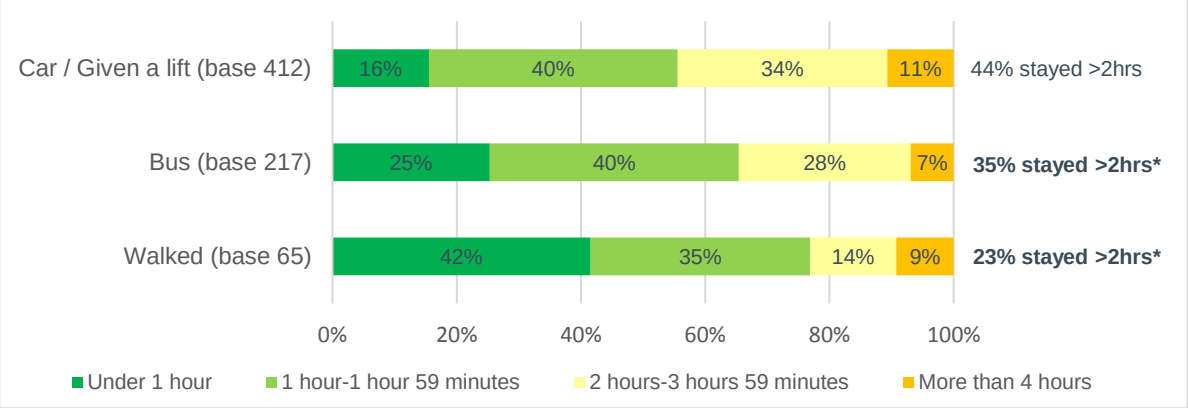
8.7. Relationship between mode used and length of stay

Figure 27 shows that in both the before and after periods, those that walked to the town centre stayed for a significantly shorter length of time than those that travelled by car.

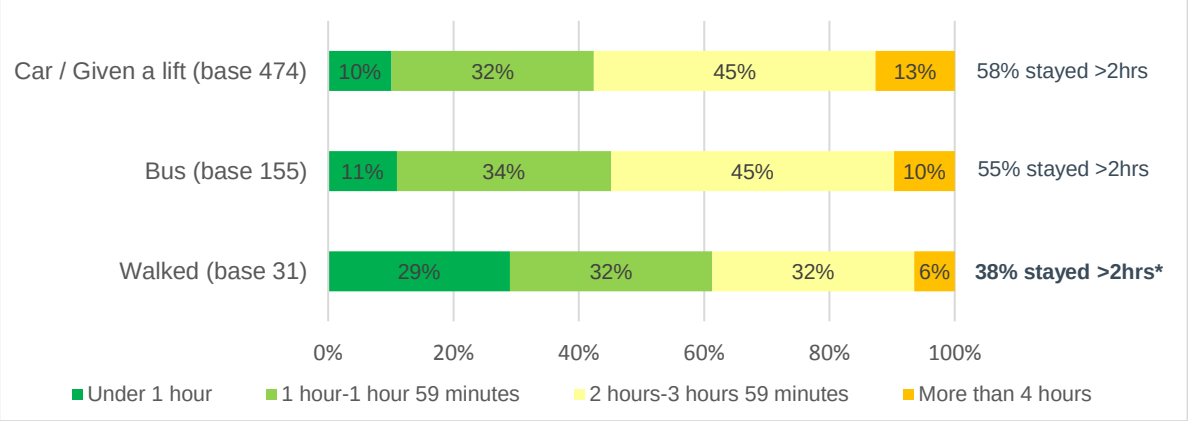
It is unclear from the data whether there is a causal relationship between mode used and length of stay. It is possible that those walking live close by and are able to visit the town easily when needed, and so make more frequent but shorter visits.

Figure 27. Relationship between mode used on day of survey and length of stay

Before - Town centre users



After - Town centre users



Significant differences between bus and car, and walk and car, marked with asterix (*).

8.8. Summary

Modes used prior to recent investment in sustainable transport measures (daytime)

- Results from the town centre user and residents surveys show that, prior to the recent investment in sustainable transport measures car was by far the dominant mode (used by 64% of town centre user and 81% of residents in the previous 12 months), followed by bus (used by 40% of town centre users and 30% of residents).

- Levels of walking were much lower (13% and 17% respectively), with levels of cycling very low (0% and 4% of residents).

Change in modes used to travel to the town centre in the before and after surveys (daytime)

- Comparison of results for town centre users in the before and after samples (modes used in previous 12 months) shows:

  - a significant increase in car use (64% *before*, 77% *after*) - with a similar significant increases reported for those living within 3kms, within 5kms, and further afield;
  - a significant reduction in bus use (40% *before*, 32% *after*) - mainly those living further afield, with no significant change amongst those living within 3kms or 5kms;
  - a significant reduction in walking (13% *before*, 9% *after*) - due to a reduction amongst those living further afield[35], with no significant change in walking amongst those living within 3kms or 5kms; and
  - no significant change in cycling overall (0% *before*, 0% *after*), or by distance.

  However, regression analysis suggests that the overall decrease in sustainable mode use is likely to be due to socio-demographic and behavioural differences between the two samples. There is no robust evidence form the analysis undertaken to suggest that the observed decrease is due to the LSTF intervention. See Appendix A (A.4.1 and A.4.2) for detailed regression results.

  The town centre now appears to be attracting new visitors from further afield and there has been a change in the profile of visitors. The after sample comprises a higher proportion of visitors travelling more than 10kms (reducing the attractiveness of walking and cycling); a higher proportion travelling as a group; a higher proportion spending more than 2 hours in the town centre; and are more likely to be combining shopping and leisure trips. This has resulted in greater dependence on the car.

- Comparison of before and after responses from the residents survey, representing real change within a retained sample of respondents, shows marginal changes only in the modes used in the previous 12 months: car 0%, bus -1%, train +2%, walk -3%, cycle 0%. This supports the above findings which suggest marginal changes only in mode use amongst those living within 3 and 5kms of the town centre.

- In terms of their most frequently used mode, the majority of residents (86%) reported no change; and nearly all of the remaining respondents shifted between car and sustainable modes, with a very small net shift towards sustainable modes (+3 out of 191 residents).

Change in intensity of mode use for travel to the town centre (daytime)

- The above findings relate to the range of modes used in the 12 months prior to the before and after surveys; but do not take account of any changes in frequency or intensity with which different modes were used (including main and secondary choices). Survey respondents were therefore asked *'Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre'*. No specific reference was made to any of the recent sustainable travel measures at this stage. Respondents were only asked about modes they had used in the last 12 months.

- A large proportion of existing users of car, bus, and walking reported 'no noticeable change' (the results of train and cycle are not reported here due to the very small sample sizes involved):

[35] These respondents are expected to have walked to the town centre from another destination in Telford (e.g. office) rather than from home.

- car (66% tcu, 61% res), bus (59% tcu, 40% res), walk (49% tcu, 35% res)[36].

The remaining existing users reported net increases[37] in the use of:

- car (+14% tcu, +4% res), bus (+21% tcu, +5% res) and walking (+16% tcu [38], +46% res).

- Those using car, bus and walk are now doing so more frequently than previously. The extent to which this is because they are now making more trips, or because they have changed modes, is unclear – but is likely to be due to a combination of these factors.

- Corresponding results from the before survey, show a more stable trend in terms of mode use prior to the recent changes in the town centre. Significantly more respondents reported no noticeable change in use of bus and walk in the *before* survey. This suggests that there has been a real change in the use of these modes, post LSTF investment.

Impact of LSTF investment on intensity of mode use

- The same respondents were then asked '*As a result of the recent transport schemes in Telford*, *to what extent do you use the following modes of travel more or less, for trips into the town centre'*.

- For most modes, the change is broadly similar to that reported above, with net increases in use of:

  - car (+20% tcu, +12% res), bus (+20% tcu, +18% res), and walk (+28% tcu, +48% res).

- Despite some inconsistencies in questionnaire responses, the findings do suggest that the recent changes have resulted in increased intensity of use of the following modes amongst existing users: car (particularly amongst town centre users); bus (particularly amongst town centre users) and walk (particularly amongst residents).

- A number of focus group participants commented that they are now using their car more for trips to the town centre due to the introduction of two-way operation on the Box Road, which has improved access to town centre destinations. This is reflected in the results presented above. Reasons given by survey respondents for greater use of walking included change in circumstances, and concerns about health and fitness, but were based on a small sample only.

- Regression analysis shows that while there is no robust evidence to suggest that the overall difference in mode use between the before and after samples is due to the LSTF intervention, there is evidence of an association between the various measures and intensity of use of sustainable modes (bus, walk and cycle):

  - Town centre users who perceived LSTF investment to have had a positive impact on town centre access (across all modes) were more likely to have reported using sustainable modes more often as a result of the recent transport investment.

  - Similarly, town centre users who perceived the recent transport changes more positively (in terms of their effectiveness) were more likely to have reported using sustainable modes more often as a result of the recent transport investment.

Levels of walking and cycling within the town centre and on key investment corridors

- The above results relate to travel into the town centre, however, the LSTF measures are mainly focused on improving the pedestrian and cycling environment within the town centre on key corridors.

[36] %s relate to town centre users and residents respectively.

[37] % more frequently - % less frequently.

[38] This figure increases to +27% for just town centre users living within 3kms; covering the same catchment area as the residents survey.

Coach Central

- Pedestrian counts undertaken in 2015 (monitoring the zebra crossing, the adjacent courtesy crossing, and points in between) showed substantially more pedestrians in this part of the Box Road than in 2012 and 2013. This finding is supported by results from the questionnaire surveys which show moderate net agreement with the statement “There are now more pedestrians and cyclists on Coach Central” (town centre users 35%, residents 40%).

- While the increase in pedestrian activity is likely to reflect the recent development in the area (Southwater and the new Asda), these pedestrians are deriving amenity and safety benefits from the new environment.

- The majority of pedestrians (four-fifths) are crossing via the zebra crossing, rather than crossing informally, suggesting that Coach Central is not currently functioning as a fully shared space environment where pedestrians feel safe crossing at any location. Nevertheless, the courtesy crossing (opposite Zara) provides a shorter and safer route than would previously have been possible, currently benefitting around 400-500 pedestrians a day.

- The overbridge is still the preferred means of crossing Coach Central (59% of town centre respondents had used the overbridge on the day of survey, compared with 28% crossing at grade). This is not surprising as it provides the most direct route between the Southwater Development and nearby car-parks and the Shopping Centre, during the day. However, there was strong net agreement (town centre users 50%, residents 58%) with the statement, ‘I am now more likely to cross the Box Road at street level rather than using the underpasses and overbridges’.

- Informal crossing facilities at street level on Coach Central are likely to become more important in future years, following the completion of the Southern Quarter development and the improvement of the street level entrance to the Shopping Centre.

- The numbers of cyclists counted was very low: 10 per day on weekdays and 15 per day on Saturdays. Cyclists therefore account for less than 1% of the active mode activity in the area.

Woodhouse Central Shared Path

- The total number of pedestrians using the new Shared Use Path are currently low; with a substantial number estimated to be continuing to use the old path which provides more direct access between Lime Green Car Park and Telford Shopping Centre (via the two underpasses).

- The total number of cyclists using the new Shared Use Path is very low; typically 25 per day on weekdays and 18 per day on Saturdays. Count data suggests that the works have not resulted in large increases in cyclists on this section of the Box Road to date, but it is difficult to draw further conclusions given the data available.

- In the short-term it is expected that pedestrian / cycle movements along Woodhouse Central will be low, as for many trips during the day it is easier to walk through the shopping centre. However, changes to the road environment are part of a longer term objective to increase levels of cycling in Telford (to the town centre and more generally), and create a more pedestrian friendly environment to support future development around the Box Road.

Woodhouse Central Crossing

- The total number of pedestrians using the new ‘at grade’ crossing is low; typically 95 per day on weekdays and 146 on Saturdays.

- Count data suggests that the majority of pedestrians (approximately 4 out of 5) are continuing to use the underpass below Woodhouse Central which provides a convenient option to/from the car parks on the outside of the Box Road.

- In the short term, the numbers crossing at street level are expected to remain low. While the questionnaire surveys show strong net agreement (town centre users 50%, residents 58%) with the statement, 'I am now more likely to cross the Box Road at street level rather than using the underpasses

and overbridges'; this is only likely to be the case if crossing at grade provides a more convenient option. However, those now crossing at grade are doing so in a safer environment.

Town Park and Silkin Way

- Manual one day counts show evidence of a large increase in cycle activity in the Town Park, from less than 100 per day between 2006 and 2013, to 185 in 2014 and 365 in 2015. Pedestrian activity also increased between 2013 and 2015, returning to the levels observed between 2008 and 2010.

- There is also some evidence of an increase in pedestrian and cycle flow on the section of the Silkin Way to the west of Legges Way (5kms from the town centre); but not a Stirchley Lane (2.5kms from the town centre).

9. Impact – Retail Economy

9.1. Introduction

This chapter examines what impacts sustainable travel investment has had on town centre activities and retail businesses. In particular, it covers:

- the impact that LSTF investment has had on the overall attractiveness of the town centre;
- the impact of the LSTF investment on changing the frequency with which people visit the town centre; and,
- the perceptions of retailers and stakeholders regarding the impact of LSTF investment on the retail economy.

The primary evidence sources are the town centre user / residents survey and the retailer interviews; with evidence from the focus groups and stakeholders used to add depth and context.

9.2. Impact of LSTF investment on attractiveness of the town centre

9.2.1. Overall perceptions of recent improvements and developments

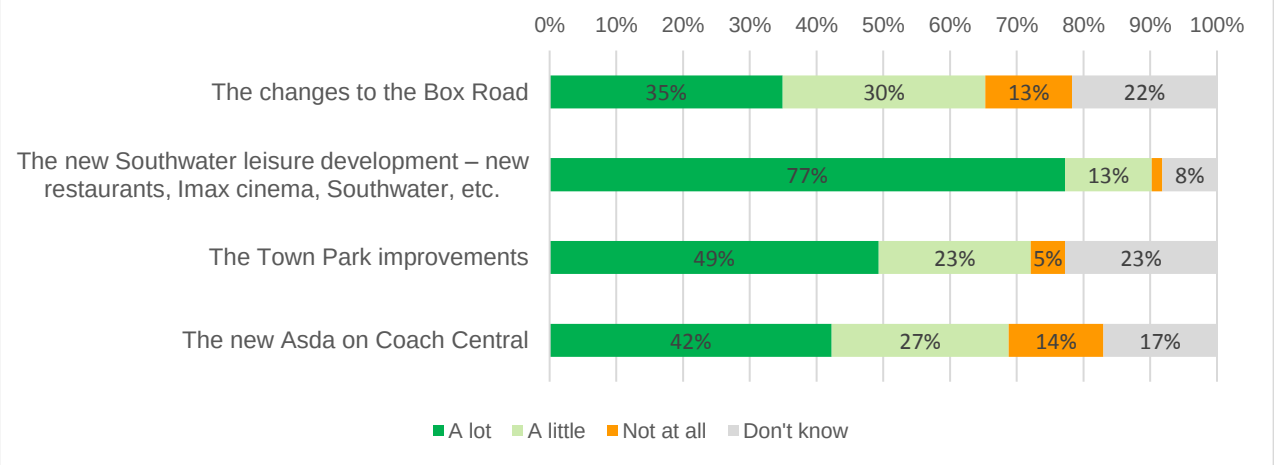
Survey respondents were asked about the role of various transport and non-transport changes in promoting Telford as a destination. As might be expected, of the four changes included in the questionnaire, the new Southwater Development is perceived to have had the most impact. However, it is also significant that the transport changes to the Box Road are perceived to have had a positive influence by around two-thirds of respondents – and are seen as nearly as influential as non-transport changes such as the improvements to the Town Park and the new Asda.

Table 24. To what extent do you think the following have helped to promote Telford Town Centre as a destination?

	Town Centre Users (Telford Shopping Centre and Southwater Development)[a]					*Residents – % Positive (A little or A lot)[b]*
	A lot	A little	Not at all	Don't know	**% Positive (A little or A lot)**	
The changes to the Box Road	35%	30%	13%	22%	**65%**	*68%*
The new Southwater leisure development – new restaurants, Imax cinema, Southwater, etc.	77%	13%	2%	8%	**90%**	*93%*
The Town Park improvements	49%	23%	5%	23%	**72%**	*74%*
The new Asda on Coach Central	42%	27%	14%	17%	**69%**	*73%*

a. Sample size for all town centre users was 939 for each statement.
b. Sample size for Residents was 242 for each statement.

Figure 28. To what extent do you think the following have helped to promote Telford Town Centre as a destination? (All Town Centre Users)



Stakeholders and focus group participants both agreed that Coach Central has played a crucial role in integrating the various developments in the area. The Southwater Development and the investment in the Town Park are seen as 'game changers' for Telford, but without the Box Road Scheme, these areas would sit separately from the town centre. All focus group participants felt that the Southwater Development would have been less successful without the recent transport changes, as it would have sat outside the town centre with poor access and severance issues.

In reality, most people to date appear to be accessing Southwater from the adjacent car parks or via the overbridge linking to the Telford Shopping Centre, suggesting that integration is more of a perception than a reality at the moment. Nevertheless, the impression that the two areas are integrated is felt to be important in selling and promoting the town centre, and will become more important as further development in the town centre comes forward.

9.3. Impact of LSTF investment on frequency of visits

Chapter 6 shows that, town centre users and residents are visiting the town centre more frequently during the daytime than previously – with a higher proportion of visitors now coming from further afield. This is in contrast to a stagnant or declining trend in recent years.

Reasons for visiting more frequently

The dominant reasons for visiting more frequently are to do with the changing ranges of shops and leisure facilities:

- Improvement in type, quality, range or opening hours of shops and services (town centre users 44%, residents 57%);
- Improvement in leisure facilities, e.g. restaurants, bars, cinemas, etc (town centre users 34%, residents 57%).

These responses are most likely to be referring to the opening of the Southwater Development which has significantly expanded the leisure and service offering in the town centre.

The next tier of reasons, includes the three factors relating to the LSTF investment:

- Improvement in ease of travelling into the town centre (town centre users 10%, residents 9%);
- Improvement in the look of the outside space (town centre users 7%, residents 23%);
- Improvement in the Town Park facilities and amenities (town centre users 9%, residents 22%).

This suggests that the transport schemes/initiatives and public realm improvements have had a positive impact on encouraging some people to visit the town centre more frequently. For a small minority (2-5%), the LSTF investment is the main reason for visiting more frequently.

Table 25. Reasons for visiting MORE frequently during the daytime than 12 months ago

	Town centre users	Residents
Retail and leisure offering		
Improvement in type, quality, range or opening hours of shops and services	44%	57%
Improvement in leisure facilities, e.g. restaurants, bars, cinemas, etc	34%	57%
More opportunities to combine shopping and leisure facilities	9%	13%
Factors influenced by LSTF investment		
Improvement in ease of travelling into the town centre	10%	9%
Improvement in the Town Park facilities and amenities	9%	22%
Improvement in the look and feel of the outside space	7%	23%
Cheaper or more convenient parking	3%	1%
Improvement in safety and security	2%	1%
Other		
Now undertaking more shopping and leisure trips in general	5%	10%
Other competing centres have become less attractive to visit	1%	4%
Now less likely to use the internet for shopping	1%	2%
Change in circumstances e.g. change of job, moved house, etc.	22%	6%
Other	**7%**	**16%**
Base (unweighted for town centre, weighted for residents)	**176**	**88**

Reasons for visiting less frequently

Chapter 6 also shows that a notable proportion of residents (31%) are visiting less frequently than previously, as are a small proportion of town centre users (10%).

The dominant reasons for visiting less frequently, other than 'change in circumstances' or 'other' were:

- Deterioration in type, quality, range or opening hours of shops and services (town centre users 9%, residents 15%) – *This may be referring to the loss of Asda from the Telford Shopping Centre*;

- More expensive or more difficult to park (town centre users 15%, residents 7%) – *There are a number of alternative shopping destinations very close by (e.g. Forge Retail Park) which offer free parking. The cost of parking was identified as a key issue in the focus groups undertaken as part of the before surveys, and was a key differentiator between frequent and less frequent visitors. However, parking costs have not changed between the before and after periods. Furthermore, parking availability has increased with the opening of the new Southwater Car Park. Nevertheless, queuing has been reported by stakeholders on the approaches to some car parks, following the change to two way operation on the Box Road, and this may be the basis for this result.*

- Deterioration in ease of travelling into the town centre (town centre users 3%, residents 9%) – *It is unclear whether this is referring to disruption during the works, or the post implementation situation. However, the works are widely acknowledged to have caused considerable disruption, with focus group participants reporting to have visited less frequently and some retailers reporting to have lost customers who have not returned. Some incidents of queuing have also emerged, on approaches to car parks and on St Quentin's Gate, and the additional crossings on Coach Central increase the potential for stop-start flow.*

Table 26. Reasons for visiting less frequently during the daytime than 12 months ago

	Town centre users	Residents
Retail and leisure offering		
Deterioration in type, quality, range or opening hours of shops and services	9%	15%
Deterioration in leisure facilities, e.g. restaurants, bars, cinemas, etc	0%	4%
Factors influenced by LSTF investment		
More expensive or more difficult to park	15%	7%
Deterioration in ease of travelling into the town centre	3%	9%
Deterioration in the look and feel or issues of safety and security	3%	2%
Other		
Now undertaking fewer shopping and leisure trips in general	13%	10%
Now more likely to use the internet for shopping	6%	10%
Other competing centres have become more attractive to visit	3%	7%
Change in circumstances e.g. change of job, moved house, etc.	43%	31%
Other	20%	43%
Base (unweighted for town centre, weighted for residents)	**79**	**75**

These results suggest that while the LSTF investment has generally had a positive impact on encouraging people to visit the town centre more frequently, the scheme has also had a negative impact on a small minority. However, only a handful of people said that they were visiting less because the look and feel of the town centre had deteriorated – reflecting the widespread acknowledgement that there has been an improvement in the quality of the public realm.

9.4. Impact of LSTF investment on the town centre economy and retailer confidence

9.4.1. Retailer views

Interviews were undertaken with twenty retailers in the Telford Shopping Centre in November 2015 to capture perceptions regarding the impact of the LSTF investment on the town centre retail economy. The retailers interviewed represented predominantly small and medium-sized comparison shops.

Views on current retail economy and retailer confidence, and driving factors

- Retailers gave mixed responses regarding the state of the retail economy. Eleven described the economy as growing and generally felt that retailer confidence was improving. Seven described the economy as declining and did not feel retailer confidence had improved.

- For the eleven businesses which said that retail confidence had improved nine cited the recent transport works as contributing to this and five said that the Southwater development had helped[39]. Specific reasons cited included:

  - better access for the public, more car-parks and easier access to car-parks, a more pedestrian friendly environment and improvements to the look and feel of the area;
  - fewer vacant stores, better quality shops and restaurants;
  - a more vibrant and inviting shopping destination able to compete with the likes of Merryhill in Birmingham.

  "The Southwater complex has made it better and the recent transport measures have held a steady positive change."

  "The development, more attractions in Telford, easy access for the public, car parking and the road layout are the reasons why".

  "It's good. Everything is now faster, quicker and better travelling in and around town."

- Two of those who felt the economy was declining still praised the recent transport investment.

  "The transport changes have been good, they are more pedestrian friendly and better looking."

- Amongst those who said retail confidence was declining, one said it was because the road works had driven customers away and they had not returned, one complained of high parking charges and lack of awareness of transport changes, one said it was part of a national downturn for retail and one said that their part of the centre had suffered because of the Southwater development.

Impact of recent transport changes on specific businesses

- Eight of the 20 businesses said that the recent changes had had a positive impact on their business with five specifically citing improved transport, both road and public transport: commenting that it had become easier for customers and workers to get to the Shopping Centre, due to replacement of the one way system and changes to the bus timetable.

- However, half (ten businesses) said the transport changes had had no impact on their business or they could not say what impact it had had. Two businesses mentioned the negative impact that the works had had on their staff. The negative impact of the works on customers was mentioned by other retailers elsewhere in the interview.

[39] It should be noted that, although this interview question did not make any reference to transport changes, the interview introduction did refer to them. This may have influenced the focus of some responses.

Impact of transport changes on attracting new businesses, or encouraging others to stay, expand, leave

- Just over half the businesses said the transport changes had attracted new businesses into the town centre or encouraged businesses to stay or expand. Many cited Southwater as evidence of new businesses, but reference was also made to new stores in the shopping centre (e.g. H&M, HMV, Yours Clothing) and pop-up shops opening up (with one pop-up retailer reporting that they had decided to stay due to their improved confidence in their location).

  Note - The responses given suggest that retailers were considering the impact of the wider development in the town centre, as well as the transport changes.

- Just one business disagreed with the above views (suggesting that the pop up shops would all be gone post-Christmas).

- The remaining eight retailers said they had not noticed any impact.

Impacts if recent transport changes not been implemented

- Over half the businesses (13 out of 20) said that it would have had a negative impact on the health of the town centre if the transport changes had not been made; with three saying that Telford would have "died". Three did not think that the transport changes had helped and thought it would be better if they had not been made – less disruption, easier access to certain car parks[40]. Two said that there would be no difference and two said they did not know.

  "The one-way system was a deterrent. Now it's easier to access the town centre."

  "In the future the growth of the shopping centre would have been slower."

  "The one way system made getting in and out of car parks a lot easier and less time consuming."

- Half of businesses said that it would have had a negative impact on their business – there would be fewer customers, staff would have been laid off or moved elsewhere, and in some cases the store would have closed. However, three retailers said the impact would have been positive if the transport changes had not be implemented – referring to the lost trade resulting from road works disruption.

Unexpected impacts resulting from the transport changes

- Over half (eleven) reported positive unexpected impacts:

  - improved road and public transport access (three businesses);
  - the Southwater development has been more successful than expected, raised the profile and status of Telford, and generated additional trade for the Southwater development (three);
  - the town park improvements have been very popular.

- There was one negative mentioned concerning the detrimental impact on their business of Asda moving. The remaining businesses did not report any unexpected impacts.

- *Again, the responses given suggest that retailers were considering the impact of the wider development in the town centre, as well as the transport changes.*

Future impacts of the transport changes

- There was a positive outlook from the business sample with respect to the expected impact of the recent transport changes on the future prosperity and health of the town centre. Over half the responses were related to increased footfall, growth or prosperity – as a result of better access, a more attractive looking centre, and a better retail / leisure offering.

[40] The access arrangements to one car park (Ash Grey) were modified, but access to other car parks was unchanged. Council officers were surprised by this comment. However, car park direction sighs were only recently installed.

"My customers and the centre visitors are telling me how attractive the town centre is now. It is now a place to look out for; definitely now getting recognised."

Impacts on staff travel

- Over half (12 businesses) said there had been no change in how staff travel to work. Five said it had improved; however, three said travel for their staff had become worse.

Summary

In general, retailers had mixed views regarding the state of the local retail economy. However, they were generally positive about the recent transport changes, and approximately half thought that the transport changes had helped boost retail performance and confidence, as a result of better access by car and public transport and a more pedestrian friendly environment.

However, there was opposition from a few retailers (~three) due to the disruption to trade during the works, and a perception that it is now more difficult to access the car-parks. These factors may be being used as justification for poor performance by some retailers[41].

9.4.2. Southwater Event Group – Case Study

In January 2016, a depth interview was held with the Southwater Events Group – owners of the Telford International Conference Centre (TICC), three hotels, and part of the land occupied by the Southwater Development.

Background

The TICC is one of the top six purpose built conference centres in the country. It holds about 150 events a year, catering for 400,000 visitors over single or multiple days. Half of the events are corporate conferences catering for up to 3,000 visitors. The rest are trade shows and public exhibitions catering for similar numbers, or professional association events and conferences,

Visitors arrive and leave at the same time. Most travel by car resulting in large input onto the local network, coinciding with the regular peak periods. Parking is offered on site, with arrangements also in place to use spaces at other nearby car parks.

Critical factors to the TICCs success are:

- A central location nationally.
- An efficient transport system at a strategic and local level.
- Sufficient hotel capacity nearby, an attractive evening economy (eating and leisure), and a destination which can be sold to event organisers.

Challenges and barriers

Prior to the recent transport changes and development at Southwater, the TICC owners struggled to sell Telford as an attractive destination. For event organisers, Telford was not seen as providing the vibrant, multi-service, and connected central destination, which most visitors were looking for. Despite its close proximity, the TICC was perceived to be disconnected from the Telford Shopping Centre and nearby hotels. The town lacked an evening economy; and at lunchtime visitors had nowhere to go, and if they did try to walk somewhere they were faced with three lanes of traffic.

Role of LSTF investment in addressing these barriers

During 2013 to 2015, TICC revenue increased by approximately 50%. During this period, the TICC expanded by 20% (in 2013), the Southwater Development opened, and transport changes were implemented on the Box Road. All of these factors are felt to have contributed to the TICC's success. The changes to the Box Road are perceived by the TICC owners to be very much part of this mix, contributing to

[41] Footfall and car park data presented in Chapter 6 suggests that customers lost during the works have come back, or have been replaced by new visitors.

the promotion of Telford as a destination and the re-messaging of what Telford is about, and creating the sense of a more integrated and connected town centre (even if the changes on Coach Central haven't gone as far as originally envisaged).

In turn, the success of the TICC has knock-on impacts on the wider economy. The TICC currently employs 450 people, up from three years ago. For every one person employed in the events industry, a further 3-4 jobs are generated in the related food and leisure sector.

The success of the TICC will therefore support the viability and growth of the existing eating and leisure businesses in Southwater, as well as the additional units being constructed as part of the Telford Shopping Centre Southern Quarter development. The Southwater Events Groups is also proposing a new 150 bed hotel and eating venue, close to the TICC. This has been facilitated by the recent growth in TICC revenue, and confidence in the future of the town centre – of which the Box Road elements have been an important contributor.

9.5. Contribution of LSTF investment to town centre developments

Although LSTF funding was not in place at the time the Southwater Development received the go-ahead, improvements to the Box Road were identified as a requirement in the Central Telford Area Action Plan (CTAAP).

Following confirmation of LSTF funding, a Telford Shopping Centre Masterplan was issued by the centre owners, outlining proposals for the expansion of the centre by up to 80%, focused around four development areas (see Section 6.2.3). As of January 2016, works had started on both the Southern and Northern Quarters, and funding had been secured from the Marches Local Enterprise Partnership for relocation of the bus station enabling further expansion of the TSC on Coach Central. TSC representatives confirmed that the Masterplan wouldn't have come forward in its current format and timescales if the Box Road changes had not secured funding. In particular, the public realm changes were seen as crucial in the context of the consideration of outward facing frontages and a new pedestrian entrance on Coach Central. This is expected to further increase pedestrian activity on Coach Central, with pedestrians benefiting from the safety and amenity benefits associated with the LSTF investment, and creating a more vibrant community space which further integrates the Southwater and Telford Shopping Centre developments.

The level of developer interest in units in the Southern and Northern Quarter developments has been good, with interest coming from retailers not currently present in Telford or in some cases the sub-region, i.e. they are not just relocations.

Elsewhere, interest has been expressed in a development plot on Rampart Way. After several years with no interest, a developer came forward in 2014/15 with proposals for a new pub – believed to be a reflection of the improved pedestrian access around the Box Road and strengthening of retailer confidence.

Furthermore, the two way operation on Box Road and the associated roundabout improvements are reported by stakeholders and focus group participants to have improved access to the Forge and Wrekin Retail parks (0.5kms from the Shopping Centre). A major national retailer has recently reported that they will be building a new outlet store at Forge Retail Park, demonstrating confidence in connectivity to this site.

9.6. Summary

Attractiveness of town centre

- There is widespread acknowledgement amongst stakeholders and focus group participants that Telford has become a more attractive destination since the completion of the LSTF works and the opening of the Southwater Development.

- The Southwater Development is perceived to have had the most impact. However, it is also significant that the transport changes to the Box Road are perceived to have had a positive influence by around two-thirds of survey respondents, particularly in terms of integrating the Southwater Development into the town centre and improving the look and feel of the outside spaces. The changes are seen as nearly as influential as non-transport changes such as the improvements to the Town Park and the new Asda.

Impact of recent transport investment on frequency of visit

- Visitors to the town centre are making more frequent trips during the daytime than previously – with a higher proportion of visitors now coming from further afield. This is in contrast to a stagnant or declining trend during the period before the LSTF works commenced. The Southwater Development appears to be attracting new visitors, who are also visiting the Telford Shopping Centre and nearby Asda. Overall, town centre visitors are now more likely to be travelling as a group, staying for longer, and combining retail and leisure trips – all positive impacts for the local retail economy.

  However, a notable proportion of residents (up to a third depending on the form of question), reported that they are now visiting less frequently in both the daytime and evening. Some may have been deterred by the traffic disruption in the town centre during the main period of works, and not returned since (see below).

- Frequency of visits is also reported to have increased in the evening amongst those living within Telford[42]; and sales of evening extensions to car park tickets are also reported to have increased. Focus group participants acknowledged that there is now an evening economy in the town centre, which did not previously exist, although the closure of the Telford Shopping Centre is the evening is still felt to be a limitation.

- The main reasons for visiting more relate to the improvement in the offering of shops, services and leisure facilities in the town centre, change in personal circumstances, or other miscellaneous factors. However, the changes funded through the LSTF have had a positive impact on encouraging some people to visit the town centre more frequently. Between 10 and 25% of respondents stated that they were visiting more due to the improvement in:

  - the ease of travelling into the town centre (town centre users 10%, residents 9%);
  - the look and feel of the outside spaces (town centre users 7%, residents 23%);
  - the Town Park facilities and amenities (town centre users 9%, residents 22%)[43].

  This suggests that the transport schemes/initiatives and public realm improvements have had a positive impact on encouraging some people to visit the town centre more frequently, alongside other factors.

  However, the scheme has had a negative impact on a small minority, due to a perceived deterioration in the ease of travelling into the town centre. This is through to reflect traffic disruption during the works period, and reported incidents of queuing on St Quentin Gate and on the approaches to certain car parks following completion of the Box Road works. Only two or three people said that they were visiting less because the look and feel of the town centre had deteriorated – reflecting the widespread acknowledgement that there has been an improvement in the quality of the public realm.

[42] Although there is little change in frequency of visits amongst those living further afield.

[43] The Town Park has benefitted from significant investment in recent years with new facilities such as a new Visitors Centre, a high ropes course, crazy golf, and creation of an outdoor arena area for concerts and major events. LSTF initiatives include a Bike Hub and improvements to the Silkin Way multi-user route.

Impact of recent transport investment on local retail economy

- The retail economy in the town centre has shown positive signs post LSTF investment and the opening of the Southwater development. People are visiting more frequently, in larger groups and staying longer. Occupancy levels within the Telford Shopping Centre have remained high and all units in the Southwater development are occupied; and footfall has remained stable since the relocation of Asda, bucking UK and regional trends for the period 2014-15. The role of the LSTF investment in contributing to these trends is difficult to isolate, but feedback from stakeholders, focus groups and town centre visitors suggests that the transport improvements are very much part of the mix of factors.

- In general, the 20 retailers interviewed had mixed views regarding the state of the local retail economy. However, they were generally positive about the recent transport changes, and approximately half thought that the transport changes had helped boost retail performance and confidence, as a result of better access by car and public transport and a more pedestrian friendly environment.

  Nevertheless, there was opposition from a few retailers due to the disruption to trade during the works, and a perception that it is now more difficult to access the car-parks. These factors may be being used as an excuse for poor performance by some retailers[44].

- Just over half the retailers said the transport changes had attracted new businesses into the town centre or encouraged businesses to stay or expand. Many cited Southwater as evidence of new businesses, but reference was also made to new stores in the Telford Shopping Centre, with one pop-up retailer reporting that they had decided to stay due to their improved confidence in their location.

- There was a positive outlook from the business sample with respect to the expected impact of the recent transport changes on the future prosperity and health of the town centre. Over half the responses were related to increased footfall, growth or prosperity – as a result of better access, a more attractive looking centre, and a better retail / leisure offering.

- Between 2013 and 2015, revenue at the Telford International Conference Centre (TICC) increased by approximately 50%, with knock-on benefits for the wider food, leisure, and hotel sectors. During this period, the TICC expanded by 20% (in 2013), the Southwater Development opened (Summer 2015), and transport changes were implemented on the Box Road (April 2015). All of these factors are felt to have contributed to the TICC's success. The changes to the Box Road are perceived by the TICC owners to be very much part of this mix, contributing to the promotion of Telford as a destination and the re-messaging of what Telford is about, and creating the sense of a more integrated and connected town centre (even if the changes on Coach Central haven't gone as far as originally envisaged).

Contribution of recent transport investment to town centre developments

- Although LSTF funding was not in place at the time the Southwater Development received the go-ahead, improvements to the Box Road were identified as a requirement in the Central Telford Area Action Plan (CTAAP).

- Confirmation of LSTF funding for the Box Road Scheme played a key role in the Telford Shopping Centre Masterplan, outlining proposals for the expansion of the Centre by up to 80% (see Section 6.2.3), coming forward in its current format and timescales. In particular, the public realm changes were seen as crucial in the context of the consideration of outward facing frontages and a new pedestrian entrance on Coach Central. As of January 2016, works had started on both the Southern and Northern Quarters, and funding had been secured for the relocation of the bus station. The level of developer interest in units in the Southern and Northern Quarter developments has been good, with interest coming from retailers not currently present in Telford or in some cases the sub-region, i.e. they are not just relocations.

- The Southwater Events Groups is proposing a new 150 bed hotel and eating venue, close to the TICC. This has been facilitated by the recent growth in TICC revenue, and confidence in the future of the town centre – of which the Box Road elements have been an important contributor.

[44] Footfall and car park data presented in Chapter 6 suggests that customers lost during the works have come back, or have been replaced by new visitors.

- Elsewhere, interest has been expressed in a development plot on Rampart Way. After several years with no interest, a developer came forward in 2014/15 with proposals for a new pub – believed to be a reflection of the improved pedestrian access around the Box Road and strengthening of retailer confidence.

- Furthermore, the two way operation on Box Road and the associated roundabout improvements are reported by stakeholders and focus group participants to have improved access to the Forge and Wrekin Retail parks (0.5kms from the Shopping Centre). A major national retailer has recently reported that they will be building a new outlet store at Forge Retail Park, demonstrating confidence in connectivity to this site.

Consequences of not delivering the LSTF package

The LSTF scheme is seen as having played a key role in driving forward the regeneration of Telford. The Southwater Development, improvements to the Town Park, and expansion of the TICC, supported by the LSTF investment, have helped strengthen the attractiveness of Telford and improved its role in the sub-region. Stakeholders identified the following consequences of not delivering the LSTF package:

- If development had gone ahead without the shared space scheme on Coach Central, the road would have acted as a significant barrier to integration of the Southwater Development into the town centre, particularly in the evening. Modelling results undertaken for the original bid showed significant queuing without the LSTF scheme (and junction improvements at Forge and Malinslee Roundabouts) in place.

- The town centre public realm wouldn't have been improved to the same extent. There may have been pressure from developers to do something, but this would have been very small scale.

- The Telford Shopping Centre would have had very limited opportunities for growth.

- The Southern and Northern Quarter developments may not have been delivered, and funding for the relocation / reconfiguration of the bus station is unlikely to have been secured. The Council, as the highway authority, and Highways England would have been very concerned about the impact of development traffic on the network, which may have resulted in formal refusal of planning permission.

- The opportunity for Telford International Conference Centre to attract new events would have been limited, due to the poor quality of the walking route to/from the station and the lack of leisure and hotel facilities.

- Long term development would have been restricted. Coach Central has provided the scope to link the Southwater Development, the existing retail area, and the planned Southern Quarter development, in a way that wouldn't have been possible without the LSTF scheme. Pedestrian and cycling improvements elsewhere in the town centre have opened up opportunities for development in other areas of the town centre.

Part C –
Redhill Case Study

10. Introduction

10.1. Introduction

This section sets out the evaluation evidence for the Redhill Case Study. It is structured around the Theory of Change Framework, described in Chapter 2 and summarised below.

The initial chapters set out:

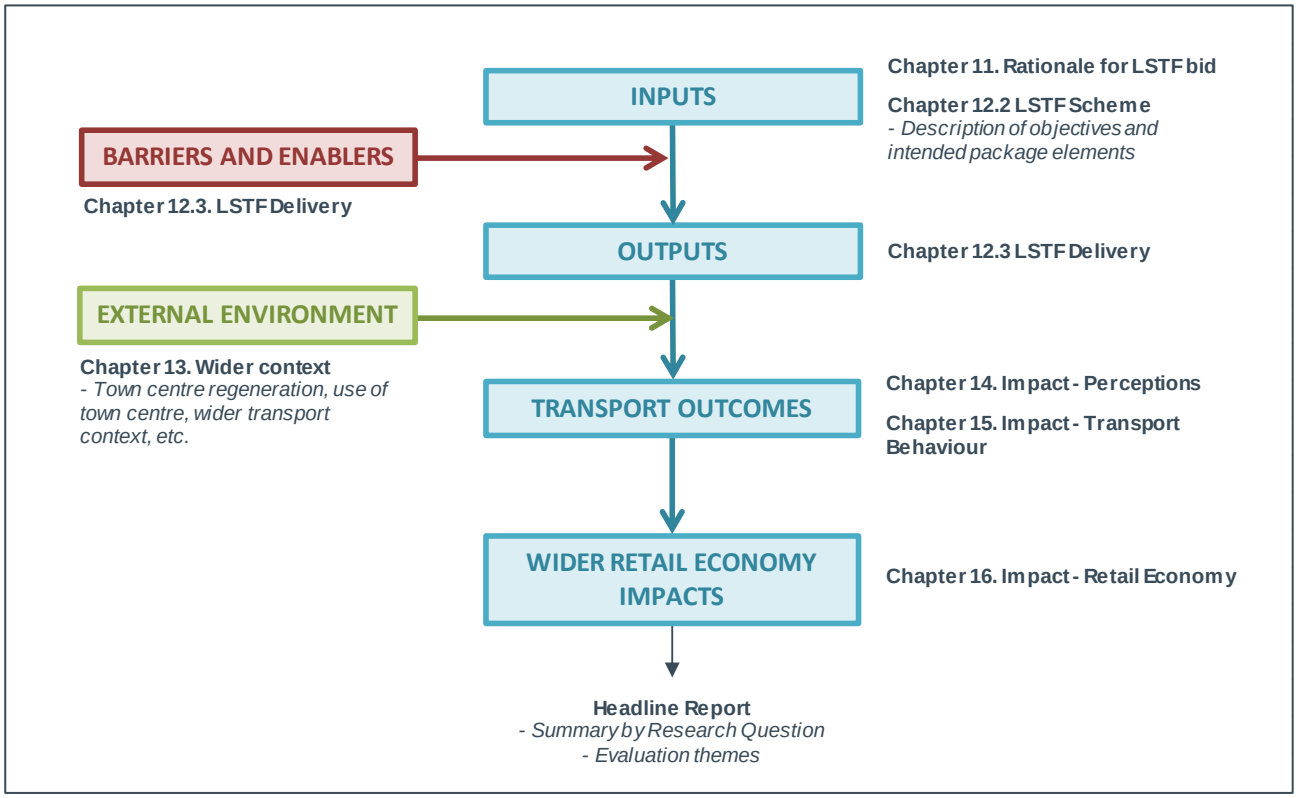
- the background and rationale for the LSTF package, and a description of the LSTF objectives and package elements – i.e. the **Inputs** to the process;
- the extent to which the LSTF package has been delivered to time, budget and quality – i.e. the **Outputs**; along with any **Barriers and Enablers** affecting delivery which may impact on anticipated outcomes;
- the potential role of the **External Environment** in enhancing or constraining the delivery of change on the ground, focusing on town centre regeneration, changes in the profile of town centre visitors and use of the town centre during the research period, the wider transport context, and other contextual factors.

The following chapters then present the evaluation evidence relating to the key **Transport Outcomes (Perceptions and Behaviour)** and **Retail Economy Impacts**, covering:

- perceptions regarding accessibility and the effectiveness of specific sustainable transport initiatives;
- the impact of LSTF investment on travel behaviour and walking and cycling activity within the town centre; and
- the impact of LSTF investment on the retail economy and the attractiveness of the town centre as a destination.

Conclusions relating to each of the research questions are then presented in the Headline Report.

Figure 29. Structure of Redhill evidence around Theory of Change framework



11. Rationale for LSTF bid

11.1. Introduction

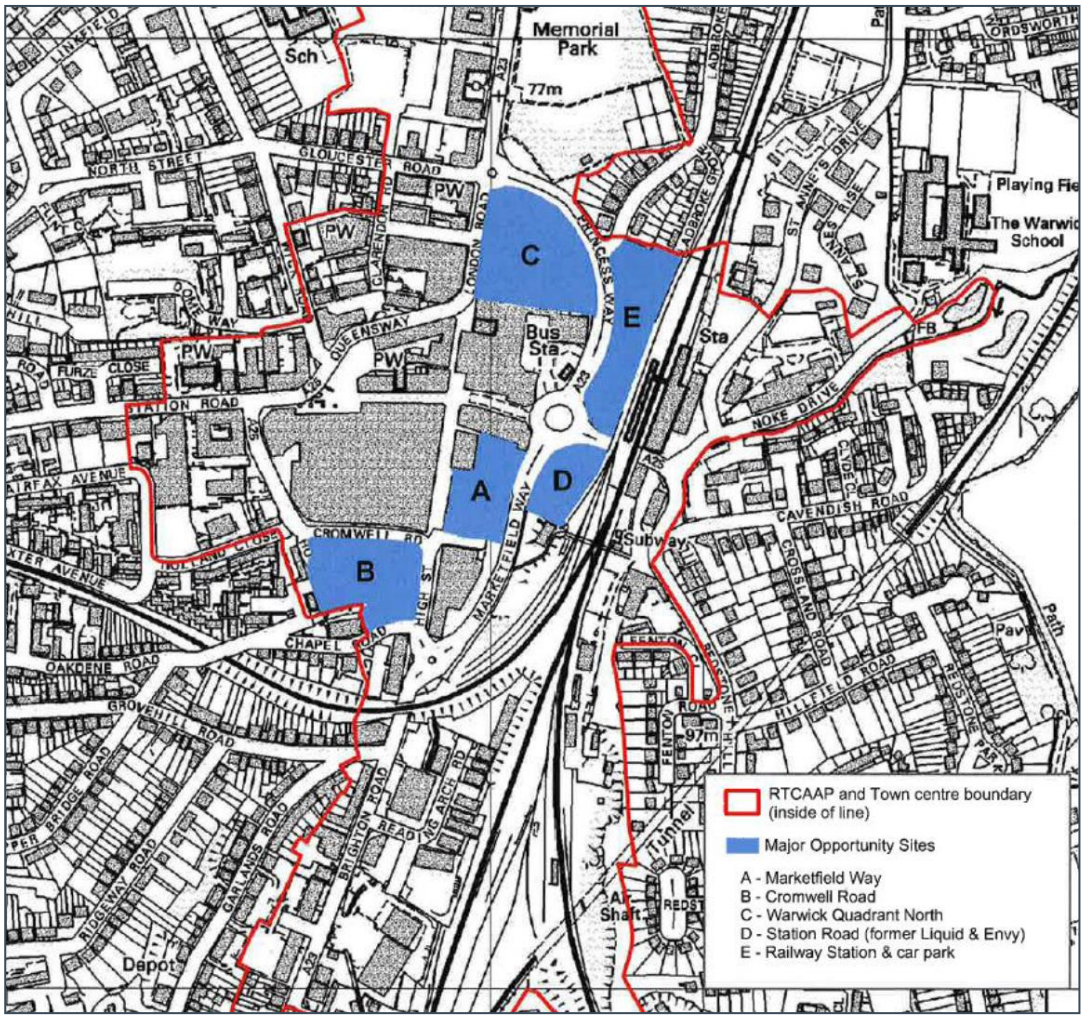
This chapter sets out the original rationale for the LSTF bid, providing a description of the scheme area, and a summary of transport and regeneration context.

11.2. Description of scheme area

Redhill town centre is identified as a regional retail hub in Surrey, in part due to its excellent road and public transport connections. The town's strategic location close to Gatwick, the M25 and M23 also means that there are a number of large employers close to the town centre.

There is currently approximately 40,500 sq.m of retail floorspace in the town centre comprising almost 170 different units. Retail activity is focussed around the main pedestrianised High Street which runs from north to south, and Station Road running east to west, with a diverse range of secondary frontages; and The Belfry indoor mall (with over 50 'high street' outlets). The Harlequin Theatre is a popular attraction, and a busy street market operates three days a week. The town centre is surrounded by a ring road comprising the A23 and A25, important strategic routes catering for north-south and east-west movements across the region (Figure 30).

Figure 30. Redhill town centre and proposed development areas



Source: Redhill Town Centre Area Action Plan Consultation Draft (January 2012)

However, at the time the LSTF funding was announced (2011), the town centre was felt to be in decline, with a poor quality built and public urban environment, a limited retail offering focused on lower value operations, a lack of food and leisure floorspace, a high level of vacant units (more than double that of the neighbouring town centres of Reigate and Banstead), and a weak evening economy, especially for young people. The town has good rail links to London, Gatwick and Brighton, which results in a large commuter population; however, the poor evening economy discourages commuters from returning to Redhill for social and leisure activities.

Severance caused by the A23/A25 one way system has historically isolated the town centre from the rail station and neighbouring residential areas, acting as a deterrent to the regeneration of the town, while severe traffic congestion and/or poor accessibility have created barriers to economic growth.

11.3. Problems and issues

The key issues affecting the town centre, as identified in the LSTF bid, are summarised below[45]:

- Significant congestion on key routes on to the one-way system, with flows ranging from 15,900–26,700 vehicles per day. Modelling the effect of future development in Redhill showed that without improvements, the highway network would become more severely congested and local journey times would markedly increase. Reducing congestion is essential to the economic prosperity of the town, as well as to the wider Gatwick Diamond area.

- Heavy traffic flow on the one-way system. In particular the dualled A23 severed the pedestrianised town centre and bus station, from the rail station and major new residential developments north of the town centre. This hindered access to the town centre for rail users, and pedestrians and cyclists from the north of Redhill.

- Poorly signed car parks resulting in unnecessary traffic on the one-way system (associated with drivers searching for a space); and poor signage to the nine industrial estates within the borough, resulting in additional heavy goods vehicles within the town centre and increased operating costs for businesses.

- A poor town centre environment for cyclists, with poor signage, low-grade cycle parking, poor permeability of the retail area (due to the one-way system), and a lack of direct routes through the pedestrianised town centre.

- Poor signage and links for walking and cycling, between the town centre and neighbouring residential areas (including new developments such as Watercolour and Park 25); discouraging use of active modes.

- Poor accessibility between areas of deprivation and the town centre. The wards of Redhill West, Redhill East and Merstham fall within the most deprived 10% in Surrey, and have levels of unemployment significantly above the borough average. Job Centre statistics indicate that many job-seekers living in these areas seek retail and customer service positions. Development proposed in the town centre (see below) will create almost 1,000 new low skilled jobs, presenting a significant opportunity to tackle this pocket of unemployment. However, these wards have particularly low levels of car ownership, and public transport is limited, particularly in evenings and weekends when many jobs would be focused. Improving transport options was therefore seen as critical to linking these new jobs with labour supply. Retailers reported finding recruitment difficult due to the poor transport links to the town centre.

- The adjoining town of Reigate has a very different character. It is a prosperous and attractive market town, home to a number of blue chip businesses including Canon and Esure. The town centre has a buoyant economy, with low levels of office and retail vacancies, and has traditionally been a preferred retail centre for a number of Redhill residents. The town is characterised by good road, poor rail links, and (prior to the recent LSTF investment) a lack of reliable and direct bus services. This has historically lead to a heavy reliance on the road network for travel to and through the town; causing significant congestion in the Redhill/Reigate area.

[45] *Surrey TravelSmart Large Project Bid (Nov 2013).*

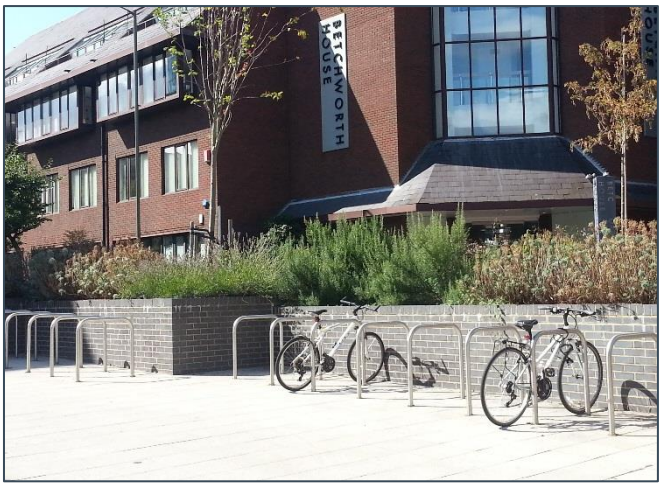
- Travel between Redhill and Reigate is difficult due to poor train connections and a lack of a reliable and direct bus services. Poor connectivity and accessibility throughout the Redhill/Reigate urban area limits access to jobs / employees, customers / markets, and public services.

Figure 31. Redhill Town Centre – Highway network and public realm (August 2014)

One way system - Queensway (A25)

Redhill pedestrianised centre (Station Road / High Street junction)

Station Road West urban realm improvement scheme (implemented 2012) - looking east from Queensway (A25)



Limited use of cycle parking infrastructure on Station Road West

Urban realm at the entrance to the Harlequin Theatre looking south on London Road

Urban realm at the entrance to the Harlequin Theatre looking south on London Road

One-way system - Marketfield Way looking north towards The Station Roundabout

Princess Way looking towards the Bus Station from the Train Station

Station Road East looking westbound

Station Road East looking east towards Redhill Train Station

Pedestrian crossing outside Train Station

Poor quality pedestrian environment under the Railway Bridge on Station Road

11.4. Redhill Area Action Plan

A key driver behind the LSTF bid was the importance on the transport and public realm environment in supporting the regeneration of the town centre, as set out in the Redhill Area Action Plan, AAP (Consultation Draft, 2012; now being incorporated into the Core Strategy Development Management Plan).

11.4.1. Proposed development sites

The Redhill AAP identifies five major opportunity sites for delivery in the short to medium term (Figure 30, Section 11.2).

- Site A - Marketfield Way
- Site B - Cromwell Road
- Site C - Warwick Quadrant North
- Site D - Station Road, former Liquid & Envy nightclub
- Site E - Redhill Station Quarter Regeneration

The proposals will result in the provision of at least 15,500 square metres of comparison (non-food) shopping floor space; 7,000 square metres of convenience (largely food) shopping floor space; the introduction of up to 3,000 square metres of leisure uses, restaurants, cafes and bars; and the development of at least 700 new homes.

11.4.2. Sustainable transport policies

The Redhill AAP also states that in order to encourage greater use of sustainable modes of transport, the following objectives will be given priority when considering new development:

- Improving access to the railway station
- Encouraging the use of buses
- Improving walking routes
- Enhancing cycling routes
- Developing sustainable parking solutions
- Providing provision for taxis and private hire cars at appropriate locations across the town centre
- Junction / network improvements to relieve congestion and increase the reliability of journey times.

12. LSTF Scheme and Delivery

12.1. Introduction

This chapter provides a description of the intended LSTF package (at bidding stage); and then examines the extent to which it was delivered as planned, and what key barriers, enablers and challenges affected delivery. The final section outlines the extent on disruption during the delivery phase, which may impact on outcomes.

12.2. Description of intended LSTF package

12.2.1. Travel Smart in Surrey LSTF Package

In 2011, Surrey County Council was successful in securing £18 million from the LSTF for its Travel SMART programme. This sought to increase the competitiveness of Surrey's economy by investing in capital improvements and behaviour change initiatives in three of Surrey's largest towns (Guildford, Redhill/Reigate, and Woking) to promote sustainable transport and tackle congestion.

In Guildford and Woking, investment was focused on business parks outside the town centres. In Reigate / Redhill the proposed measures were focused on Redhill town centre, to promote retail and service activities and support the significant regeneration proposed for the town.

The Redhill element of the Travel SMART programme was based around the following objectives:

- To maximise local regeneration benefits from the Redhill town centre redevelopment by improving public transport, walking and cycling connections between Redhill, Reigate and the surrounding area.
- To improve accessibility from areas of deprivation (including Merstham) to emerging job opportunities, in support of Redhill town centre regeneration.
- To reduce severance between Redhill rail station, town centre and bus station, by improving provision for pedestrians and cyclists.
- To help tackle congestion by improving information for car parking and freight deliveries.
- To improve the permeability of Redhill town centre with clear signing.

Supporting measures included:

- junction / network improvements to the ring road around the town centre and conversion to two-way operation *(funding received for Balanced Network Scheme in May 2013 – see below)*; and
- partnership working with JobCentrePlus to up-skill local residents and ensure that they have the right skills for the new jobs which will be created in the town centre.

The development proposed in the town centre will create new lower paid jobs in the retail and leisure sector. The above approach was intended to ensure that local residents have the right skills and provide the transport infrastructure needed to enable new jobs to be accessed cheaply and safely (on foot, by cycle, or by bus).

Redhill Town Centre Balanced Network Scheme
In May 2013, Surrey County Council was awarded £2.8 million of grant funding from the government's Local Pinch Point Fund to improve the ring road around the town centre and convert it to two-way operation.
The £4 million project involved a series of link and junction improvements to reduce congestion and improve accessibility for motorists, bus users, cyclists and pedestrians from surrounding areas into the town centre and the railway/bus station, whilst also enhancing the social and economic environment. It also involved upgrades to most bus stops in the town centre.
The scheme is intended to create the extra capacity on the network required to enable major town centre redevelopments to go ahead. Changing from one-way to two-way operation on the ring road increases road capacity and enabled some footways to be widened, particularly at junctions.

The scheme also sought to address severance caused by the A23 / A25 and create a gateway feel to the town:

- The existing footway outside the station has been widened, the roundabout has been made smaller, and guard railing removed to improve access and create a direct line of sight between the rail station and the town centre. In addition, Station Road East has been pedestrianised in a style to Station Road West (see Figure 31, Section 11.3).
- A high quality public space and gateway has been created at the southern entrance to the town centre at Cromwell Road/Marketfield Road Junction. The access road to Marketfield Car Park (which has been closed for redevelopment) has been paved, creating a more open and distinct gateway to the town centre.

Construction of the Balanced Network Scheme started in 2013 and was completed in Spring 2015.

The Balanced Network and LSTF projects are intrinsically linked and separating out the role of each scheme in driving outcomes is unrealistic.

A logic map showing the transport outcomes and wider impacts which the LSTF package and wider interventions are expected to deliver is presented in Figure 32.

12.2.2. Proposed measures

The proposed LSTF measures *(set out in the LSTF Large Project Bid – Strategic Case, 2011)* were primarily located in the town centre and in the corridor to the north of the town centre:

(i) Cycle and walking improvements in the Town Centre

- New cycle routes linking into existing NCR21 (which currently follows the A23 Marketfield Way section of the ring road, see separate Redhill Case Study – Maps and Photos document).
- Improved pedestrian crossing facilities between town centre and station.
- Improvements to Cromwell Road area (southern gateway to town centre).
- Brompton dock to be introduced at Redhill Rail Station.
- New wayfinder mapping and signs to be provided throughout the town, at the key gateways and the pedestrianised area of Redhill.

(ii) Variable message signing in the Town Centre

- Variable message signing for town centre car parks.

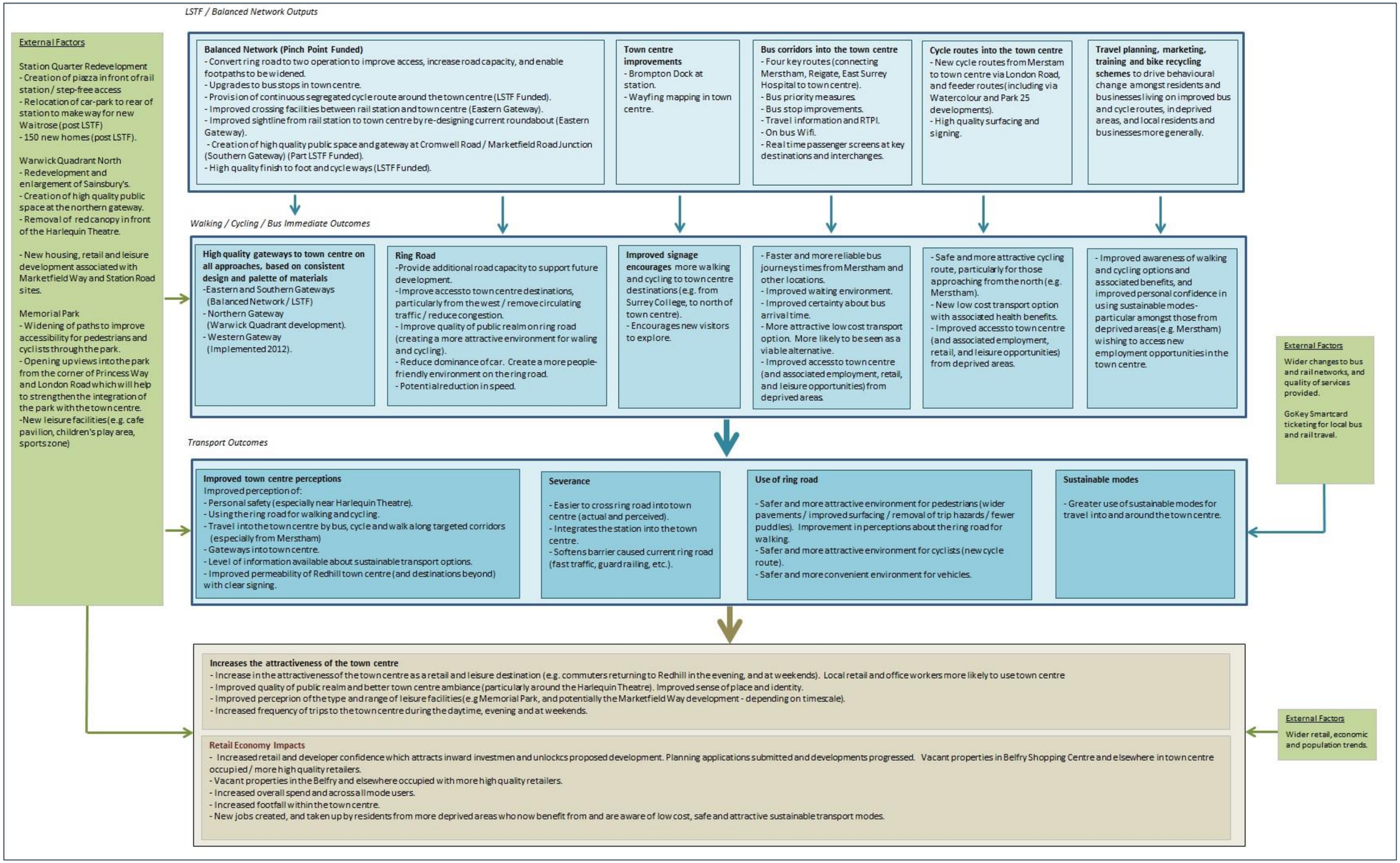
(iii) Cycle and walking improvements in Northern Corridor

- New cycle routes providing continuous, well-signed, safe and direct cycle routes between communities and places of work, schools, leisure, shopping and public transport. The main focus of investment was intended to be in the northern corridor, connecting Redhill town centre and Merstham, via the new housing developments at Watercolour and Park 25, and East Surrey College (see separate Redhill Case Study – Maps and Photos).

(iv) Bus corridor improvements and multi-modal access points

- Improvements on four corridors across Redhill (N, S, NW, W – see separate Redhill Case Study – Maps and Photos) - including intelligent bus priority measures at signalised junctions; traffic management in the form of clearways, bus cages and revised waiting restrictions at bus stops; and bus stop access improvements, travel information and bus shelters.
- Multi-modal transport access points at local hubs of community activity (shopping parades, near health facilities etc.) and on cycle routes, to improve interchange between bus services, cyclists and pedestrians. Facilities to include cycle parking, travel information, lighting, and raised kerbing.
- On-bus Wi-Fi.
  Real Time Passenger Information screens to be introduced at East Surrey Hospital, East Surrey College, Bus Station, and Rail Station.

Figure 32. Redhill LSTF Package (and wider interventions) – Detailed logic map focused around research objectives



(v) Smart-ticketing

- Surrey-wide initiative.

(vi) Travel information

- Interactive online journey planning website for the general public covering Reigate, Redhill, Merstham and Eastwood, and bespoke versions for local businesses.

(vii) Active travel marketing and promotion

- Active travel marketing and promotion (to residents and businesses) along the improved bus and cycle corridors and discounted cycle training.
- Wide scale marketing campaign in conjunction with local retailers, travel events, and roadshows. Funding for Bike-It scheme.

(viii) Business engagement activities

- Business engagement activities (information, travel plan training, business travel plan forums, eco-driver training).

(ix) Community Hubs

- Community Transport Hubs targeted at residents in Redhill West, a deprived ward close to the centre of Redhill, and Merstham.

(x) Community Infrastructure Fund

Community Infrastructure Funds, targeted at residents in Redhill West, a deprived ward close to the centre of Redhill, and Merstham

Budget

The initial bid for the Redhill element of the Travel Smart Package was £4.8 million (~40% capital; ~60% revenue), of which £4.1 million was sought from the DfT and £0.7 million was in the form of local contributions *(LSTF Large Project Bid, 2011)*.

12.3. LSTF delivery (Outputs, Barriers and Enablers)

12.3.1. Actual delivery

The LSTF programme for Redhill was largely delivered as intended, in terms of scope and spend (see Table 27).

Delivery exceeded expectations for some elements in the town centre, as a result of funding being secured for the Balanced Network Scheme. This enabled more ambitious cycling and walking improvements to the ring road to be delivered, namely:

- a continuous shared cycleway around the town centre; and,
- creation of a high quality public space and gateway on the southern entrance to the town centre at Cromwell Road/Marketfield Road Junction, with LSTF funding enabling a higher quality finish.

The original proposals included provision of car park variable message signing to improve access to town centre car-parks. This was not implemented as part of the LSTF package, due to the construction of the Redhill Balanced Network Scheme which changed traffic flow within the town centre and addressed many of the issues the initiative was intended to solve (two-way operation will improve access to car-parks). Any future implementation of this infrastructure is expected to be post 2015, with funding coming from other sources.

The proposed Surrey-wide smart ticketing scheme was not implemented as Southern Railways launched their own smartcard scheme.

The cycle lane on London Road is the only significant capital element that remains undelivered. While this was a named component of the cycle network proposed in the LSTF, the intention was always that this would be funded from Section 106 money, and therefore had the flexibility to be delivered after the LSTF funding period. Detailed designs for the London Road cycle path were submitted in early Summer 2015 and construction is expected to be completed in 2017. The scheme will provide a highly visible measure for promoting cycling on a key corridor into the town centre. **The postponement of the London Road cycle scheme to 2017 is expected to reduce the scale of the cycling outcomes achieved at the time of the after surveys, particularly in the northern corridor.**

There was some modification to the revenue programme as certain capital elements (particularly those linked with the Balanced Network Scheme) took longer to complete. Revenue funding was back loaded as capital measures were intended to support the behavioural change initiatives.

Table 27. Summary of LSTF Delivery – Redhill package

Proposed LSTF Package	Summary of Actual Delivery
(i) Cycle and walking improvements in the Town Centre	**Delivery exceeded expectations.** See detail below.
- New cycle routes linking into existing NCR21 on Marketfield Way section of the ring road	**Delivery exceeded expectations.** Funding for the Balanced Network Scheme provided the opportunity for the creation of a continuous shared cycleway around the town centre ring road, significantly improving cycle accessibility to / through the town centre and rail station. Paths have been widened substantially at several locations around the ring road, with additional space created by narrowing the carriageway. The Council have encountered problems in purchasing land required to remove the wall and widen the section of narrow path on the Princess Way section of ring road. This issue is still being resolved and the shared use cycleway will be completed once this has been agreed. *This scheme was primarily funded as part of the Balanced Network Scheme, with LSTF funding enabling a higher quality finish.*
- Improved pedestrian crossing facilities and accessibility between town centre and station	**Delivery exceeded expectations.** Pedestrian crossing facilities at the A23 through to the town centre widened and resurfaced. Funding for the Balanced Network Scheme provided the opportunity to significantly address severance caused by the A23 and create a gateway feel to the town, by widening the existing footway outside the station, making the roundabout smaller, and removing guard railing to improve access and create a direct line of sight between the station and the town centre. In addition, Station Road East has been pedestrianised in a style similar to Station Road West (see Figure 31). *LSTF funding used for crossing improvements, and enabled a higher quality finish to the Balanced Network elements.*
- Improvements to Cromwell Road / Marketfield Rd junction (Southern Gateway to Town Centre)	**Delivery exceeded expectations.** Funding for the Balanced Network Scheme enabled the creation of a high quality public space and gateway on the southern entrance to the town centre at Cromwell Road/Marketfield Road Junction. Works started in January 2015 and were completed late Spring 2015. The access road to Marketfield Car Park (which has been closed for redevelopment) has been paved, creating a more open and distinct gateway to the town centre. *This scheme was primarily funded as part of the Balanced Network Scheme, with LSTF funding enabling a higher quality finish.*
- Brompton Dock at Rail Station	**Implemented as planned.** Installed November 2013. Users can download an app and register to use the Dock which takes approx.10 minutes. Promotional activities included: a Google Ad-Words campaign, marketing leaflets in local cafes, and a town centre promotional event to give the public a chance to trial the bikes.
- Wayfinding	**Implemented broadly as planned.** New wayfinding mapping for pedestrians has been provided throughout the town, at the key gateways and in the pedestrianised area of Redhill, similar in concept to the 'legible London' system. Seven totems were installed in March 2015 at the rail station (x2), bus station, and at each of the town centre gateways (x4). At least 20 finger posts and new signage for cyclists have been installed on key

		access routes into the town centre (from East Surrey College to the north, East Surrey Hospital in the south, and to Donyngs Leisure Centre to the west). Section 106 payments will be used to keep the mapping up to date as new developments are completed. There was some local negative press following scheme implementation with people questioning the need for such signage given the size of the town.
(ii) Variable message signing		**Not delivered.** VMS scheme postponed until completion of Redhill Balanced Network Scheme.
(iii) Cycle and walking improvements in Northern Corridor		**One element still outstanding.** Improvements have focused on creating / upgrading cycling routes in the northern corridor, to improve accessibility from areas of deprivation in Merstham to emerging job opportunities in the town centre, and improve access to/from new housing developments at Watercolour and Park 25, and East Surrey College (see Redhill Case Study – Maps and Photos, separate document). • Route 1B: London Road Shared Cycleway - Scheme involved creating a continuous off-road cycle route from the Rail Station to East Surrey College (via London Road). A new shared use cycleway has been created through the recently improved Memorial Park, to enable cyclists heading north from the station to avoid using the busy Princess Way / London Road roundabout. However, works on London Road to narrow the central reservation and create a shared pedestrian / cycle path along one side of the entire length of London Road have yet to start (detailed designs submitted early Summer 2015, construction due for completion in 2017). • Route 2B: New Battlebridge Lane (completed February 2013) – Route 2 provides a quieter cycle route option between the town centre and the London Road area of Merstham. • Route 5A: Alpine Road Link – Resurfaced and cleared pedestrian / cycle alleyway linking London Road Shared Cycleway to Alpine Road (completed Summer 2014) and into Route 2 into the back of East Surrey College Way, and Route 5 to Holmethorpe Industrial Estate, and the Watercolour and Park 25 housing development. • Route 4B, 5B, 5D, Grovehill Junction – New traffic island installed to aid crossing movements (February 2015) In addition, the following alleyways have been upgraded for pedestrians: • Monson Road Alleyway – Resurfaced alley improving access to London Road. • Ladbroke Road Alleyway – New tarmac surface constructed to replace previous mud surface. This is one of the few options for pedestrians to cross the railway, and avoids the need for a lengthy diversion into the town centre, to cross at the station.
(iv) Bus improvements		**Implemented broadly as planned.**
- Corridor improvements		**Original proposals refined to focus on three rather than four corridors, following further analysis of patronage data, input from bus operators, and opportunities to influence economic growth.** Bus stop improvements implemented on the following corridors (see Redhill Case Study – Maps and Photos, separate document): • North-East Redhill (completed July 2014) – Targeted at the 430/435 bus service to Holmethorpe Industrial Estate, the new Watercolour housing development, and Merstham (via Ladbroke Road and Frenches Road). Route 430/435 is the main public transport service to / from the Merstham (an area of high deprivation), and is therefore a very busy route. Approx. 35 bus stops have been improved along the route (clearways, bus cages and raised kerbs implemented). • South East Redhill (January 2015) – Targeted at 420,424, 430, 435 and 460 bus services, calling at East Surrey Hospital (one of the largest employers in East Surrey) and Earlswood residential community. About half the 16 stops have been improved. • Redhill – Reigate (March 2015) – Improvements planned for the main roads connecting Redhill and Reigate: Station Road, Hatchlands Road, Blackborough Road and Reigate Road. Approximately 25 bus stops upgraded.
- Multi-modal access points		**Implemented broadly as planned.** Multi-modal transport access points have been created at: East Surrey College • Two new bus shelters have been installed on London Road outside the College, and LSTF money has been used to provide Real Time Public Transport Information to media screens in the College Foyer (purchased by the College). Lack of adequate shelter meant that students were previously reluctant to use the bus during wet

		weather. The new facilities mean that students can monitor bus arrivals from the College Foyer, and do not need to wait outside for long periods. • New wayfinding finger posts have been installed outside the college and on routes into the town centre. • Secure bike storage pods have been provided for staff. • An electric vehicle charging point has been installed. • Personalised Journey Planning and Roadshow. College is part of Redhill Business Forum. • Once the shared cycle path on London Road has been completed (Summer 2015), there will be a continuous off-road cycle route from the station / town centre to the College. East Surrey Hospital (S Redhill): • Real Time Passenger Information screens have been introduced at East Surrey Hospital (see above), East Surrey College (see above) and Bus Station • Secure bike storage pods have been provided for staff.
- On-bus Wi-Fi		**Metro Bus provided Wi-Fi on board their buses independently of the LSTF funding.**
- Real Time Passenger Information		**Implemented as planned.** Screens introduced at East Surrey Hospital (see above), East Surrey College (see above), Bus Station, and Rail Station.
(v) Smart-ticketing		**A Surrey-wide LSTF-funded initiative was not implemented as Southern Railways' new keyGo smartcard overtook SCCs smart ticketing aspirations.** Allows passengers to use trains, buses, trams and London Underground.
(vi) Travel information		**Some elements changed, but not felt to impact on outcomes.** A journey planning website launched in July 2013. As part of this, a new interactive map was to be developed, however, this proved to be a complex product to develop and the decision was made to postpone the delivery of this tool. As an alternative, pdf versions of cycle/walking maps highlighting new routes are available online. An interactive map remains a longer term objective. Walking/cycling maps (over 10,000 printed) were produced and distributed via Travel Smart centre, library, bus station, and college. Proved to be a very popular resource and exceeded expectations. Additional maps were printed to meet demand. Onward walking maps have been provided at bus stops. *See also wayfinding scheme (above).*
(vii) Active travel marketing and promotion		**Delivered on a smaller scale than originally intended, but in proportion to scale of infrastructure improvements.** Winter and summer LSTF awareness poster campaigns were run in 2013 and 2014. Analysis indicates a 50% recognition rate after summer 2014 which is the highest level recorded for a Council led campaign. Bus stop posters and social media, such as twitter/Facebook, has been utilised as a tool to disseminate messages/information. The number of followers on these apps continues to grow. The extent of promotional activity undertaken was intended to be greater than the amount undertaken. For example, a leaflet drop had been planned for the area north of Redhill on the routes/corridors with walking/cycling improvements. However, these activities did not happen due to slippages in the delivery programme of the London Road walking/cycling routes, construction of which occurred at the end of the programme. Given the amount of infrastructure in place SCC felt that the amount of promotional activity was proportional.
(viii) Business engagement activities		**Underspend on allocated funding** A Redhill Business Forum was set up, and allocated £50k per year to propose business-focused projects for SCC to implement as part of the LSTF. 50% of funding was allocated to capital schemes and 50% to revenue initiatives. 10-12 projects were funded in Redhill, including pool bikes, bus tickets, bus shelter at college, lockers at college and hospital, remote working seminar. However, it took 12 to 18 months to build the Forum and local businesses then struggled to generate revenue-based proposals to promote sustainable travel or economic growth in the time available to them. This resulted in an underspend, as a requirement for Councillor sign-off meant that the unused revenue funding could not be transferred to capital schemes. More traditional Personal Travel Planning approaches were also undertaken with businesses - travel plan training, business travel plan forums, eco-driver training.

(ix) Community Hubs in Redhill West and Merstham		**Delivered as intended.** The Live Smart Centre opened in the Belfry Centre in 2014 and provided travel and wellbeing information to the community. It had a broad scope, ticking a number of community targets in terms of employing local volunteers, linking up with initiatives for cycle training, providing people with access to affordable bikes, and improving the perception of high vacancy rates in the Belfry Centre. Generally viewed as a success by locals and by Councillors, and at the end of the funding period there was a wish to retain the centre. The Live Smart Centre was closed in May 2015 but efforts are being made to find funding from other sources to continue some of the activities in another locations, potentially the local YMCA. The Bikes Revived hub in Merstham opened in April 2012 with the seed funding coming via Comic Relief. The project was further enhanced by LSTF Travel SMART funding. Through cycling and cycle maintenance, Bikes Revived aims to encourage people to develop healthier lifestyles, personal empowerment and self-reliance in the community. Bikes Revived has 'revived' hundreds of bikes for the community, and has trained over a hundred people on bike maintenance through its various programs and courses. While the LSTF funding has now ended, the Bikes Revived initiative is now self-funding and will continue to operate within the Merstham community.
(x) Community Infrastructure Fund		**Fund spent in full** Various community funding events have been undertaken in both Redhill West and Merstham since 2012/13, resulting in funding awarded to travel accessibility schemes for people with disabilities, cycle parking / shelters for schools, etc. Approx. 100 projects were funded from a grant fund of £400k over three years. Projects could either address sustainable travel (walking/cycling); and/or economic growth (access to employment through job clubs, etc). Bids could be made by any not for profit organisation. Applications were received from a number of groups including charities (e.g. mental health), Surrey Long Life Learning, Borough Council, schools, housing associations (e.g. Raven), community groups (e.g. Bike hub), etc. SCC reviewed all applications to ensure that they adhered to the application criteria, a short list was produced which was put to a citizen panel/jury who selected bids which met a need in the community. A voting day was held for larger projects. The LSTF Community Engagement Model has won a Sustainable Cities awards and SCC have advised other local authorities on how to implement the model elsewhere.

Key:

	Delivery exceeded expectations.		***Implemented broadly as planned.***		***Some key elements not delivered or changed.***		***Largely undelivered.***

A separate document on **Redhill Case Study – Maps and Photos** presents before and after photos for the infrastructure improvements, illustrating the changes which the LSTF programme has delivered on the ground; along with images of revenue-based initiatives.

12.3.2. Delivery barriers, enablers and challenges

Barriers, enablers and challenges identified by Surrey Country Council (and other stakeholders where identified) are summarised below.

Barriers

- The programme for delivering LSTF capital elements was complicated by the receipt of funding for the Balanced Network Scheme, and resulted in certain LSTF schemes taking longer to deliver than anticipated. This limited the time available to implement the revenue-based travel behaviour initiatives which were designed to promote the capital improvements.

- Development proposals for the Cromwell Road site were withdrawn during the funding period, resulting in uncertainty regarding how any future development of the site would impact on the two way running of the A25.

- Securing buy-in and approval from members was initially challenging. Members only meet five times a year and were initially sceptical about the benefits of revenue-based initiatives. However, their local

knowledge and input was a real benefit, helping to inform detailed design and minimise complaints and challenges from the public.

- Councillor sign-off was required for any initiatives requiring funding which came out of the Community Engagement and Business Forums. 80% of initiatives presented to County Councillors were approved and have been delivered; but some proposals didi not receive approval.

- There was no existing business forum (e.g. Chamber of Commerce, Business Breakfasts, and Business Guild) within Redhill town which could be used to engage with businesses. This meant that business links had to be developed from scratch, and initially slowed progress.

- The timeframe for the Business Forum and Community Infrastructure Fund initiatives was challenging. Setting up a group, deciding on projects and implementing them in the funding period was challenging. A longer programme would have been beneficial, allowing time to first raise awareness, then undertake projects over a period of months or years, allowing habits to form over time.

- Surrey County Council have not adopted the roads in the Watercolour Estate and there is currently no intention of doing so. This has resulted in a gap in the wayfinding provision between the Estate and the town centre. In the event that these roads are adopted in the future, it is likely that the wayfinding measures will be rolled out through the area.

- Saturation point was reached in terms of communities and businesses identifying new and varied initiatives for funding. The business forums in particular struggled to identify suitable projects for funding and certain initiatives, such as bike lockers at certain key employment sites, received a greater proportion of funding then may have been anticipated.

- Attendance at LSTF promotional events such as the Bike Festival which was run in Reigate in Summer 2014 was very good. However, other events such as behavioural change events organised via businesses were generally poorly attended even though awareness of the LSTF programme was high.

- Flooding in winter 2013 delayed work on NCR21.

- The bus ticket initiative coincided with the worst of the Balanced Network road works and was not a success in terms of encouraging non-bus users to consider it as an option. The timing of any future initiatives requires greater scrutiny.

- Undulating topography within the town can represent a barrier to cycling and walking for various users - *although other hilly towns and cities such as Brighton have achieved significant growth in cycling.*

Enablers

- The Pinch Point Funding for the Balanced Network, which improved the ring road around the town centre and converted it to two-way operation; helped to deliver upgraded cycling and walking routes, segregated cycle paths and higher quality pavement; and allowed for a more seamless transition between the various elements than would have been possible solely with LSTF funding. Funding for the Balanced Network scheme was not secured until May 2013.

- Close working with Banstead & Reigate Council helped dovetail the LSTF schemes with the wider development in the area.

- The existing sense of community in Merstham, created through initiatives such as the Community Trust shop, encouraged participation and engagement with the LSFT programme. However, there was less of a community spirit apparent in Redhill West.

- East Surrey College was very supportive.

Challenges:

- Managing traffic management arrangements and maintaining access to the town centre car parks, particularly on busy days (e.g. Fridays, Saturdays, Christmas).

12.3.3. Disruption during delivery phase

Stakeholders representing the Belfry Centre, retailers, and focus group participants reported that the LSTF / Balanced Network works caused significant traffic disruption, particularly in the second half of 2014/15 and attracted some negative press. The worst of the disruption coincided with other significant works on the wider network, at Pebble Hill near Betchworth and on the A25.

"Last year was so horrible with all the road works" (retailer).

Bus journey times are perceived to have been worse during the works, however, there is no evidence as to whether this encouraged any passengers to switch mode.

While local businesses were generally supportive of the objectives of the schemes, the period of the works programme exceeded expectations and created frustration amongst retailers. The disruption was reported to have deterred some visitors and footfall, parking and retail performance was negatively impacted on during the period.

12.4. Summary

In 2011, Surrey County Council was successful in securing £18 million from the LSTF for its Travel SMART programme, comprising capital improvements and behaviour change initiatives in three of Surrey's largest towns (Guildford, Redhill, and Woking) to promote sustainable transport and tackle congestion. In Redhill the proposed measures were focused on the town centre, to promote retail and service activities and support the significant regeneration proposed for the town.

The LSTF programme for Redhill was largely delivered as intended, in terms of scope and spend. Delivery exceeded expectations for some elements in the town centre, as a result of funding being secured for the Balanced Network Scheme. This enabled more ambitious cycling and walking improvements to the ring road to be delivered, including a continuous shared cycleway around the town centre. A few elements weren't delivered: car park variable message signing (due to the construction of the Redhill Balanced Network Scheme which changed traffic flow within the town centre and addressed many of the issues the VMS was intended to solve); the proposed Surrey-wide smart ticketing scheme (as Southern Railways launched their own smartcard scheme during the LSTF period); and the cycle lane on London Road (expected to be delivered in 2016 using S106 contributions). **The postponement of the London Road cycle scheme to 2016 is expected to reduce the extent to which the LSTF investment has achieved the intended cycling outcomes to date, particularly in the northern corridor.**

There was some modification to the revenue programme as certain capital elements (particularly those linked with the Balanced Network Scheme) took longer to complete. Revenue funding was back loaded as capital measures were intended to support the behavioural change initiatives.

13. Wider Context (External Environment)

13.1. Introduction

This chapter identifies the changes in the external environment which may have impacted on the effectiveness of the scheme, including:

- town centre regeneration;
- change in profile of visitors and use of the town centre;
- local retail performance and context; and
- the wider transport context; and
- wider economic trends.

13.2. Town centre regeneration

13.2.1. Proposed development sites

During the LSTF investment period, various progress has been made regarding the five major opportunity sites in the town centre. However, the only physical changes to date are closure of Marketfield Car Park (Site A) and commencement of works associated with the re-development of Sainsbury's (Site C), which started in Summer 2015 (post the baseline surveys for this study). Neither of these changes are expected to have had a substantial impact on frequency and use of the town centre, perceptions of accessibility, or travel patterns to date.

Site A - Marketfield Way

A high quality, mixed use, retail-led regeneration scheme with a leisure anchor, is proposed on Marketfield Way Car Park, to kick-start a change in the town centre's retail offer and evening economy. The site is opposite the main entrance to the Belfry Shopping Centre and is a prime retail pitch in the town centre. Current proposals are for a cinema, and up to 10 retail / restaurant units which will front onto the High Street and Marketfield Way, with 150 apartments above and parking. The car park was closed in 2015. A planning application was scheduled to be submitted in Spring 2016, with construction expected to start in 2017.

Figure 33. Proposed Marketfield Way redevelopment

Source: www.reigate-banstead.gov.uk/news/2014/january/developerchosenforredhillsnewcinemaandretailcomplex.asp

B - Cromwell Road

The Cromwell Road site represents a priority for redevelopment within the town centre, due to the derelict state of the existing premises and the need to give this part of Redhill town centre a new lease of life. Following the withdrawl of a key developer in 2014/15, Reigate & Banstead Council are now developing plans to regenerate the site.

Figure 34. Cromwell Road Site (Photo - Nov 2013)

C - Warwick Quadrant North

Warwick Quadrant is being revitalised with the replacement and expansion of the existing Sainsbury's supermarket on London Road. The new store will be 80,000 sq.ft and create 350 full and part time job opportunities. The development will also include office accommodation, a 98 room hotel, and gym, multi-storey car park of 927 spaces and new access arrangements.

The new development will create a high quality northern gateway to the town centre in the London Road/High Street area with significant public realm enhancements; improve the entrance to the Harlequin Theatre and Council library; and provide a significant social and economic boost to the local community. Re-development of the site started in Summer 2014 (with the demolition of the adjacent Lombard House) and is due for completion in Spring 2017.

Figure 35. Warwick Quadrant North Redevelopment (Photo - August 2014)

D - Station Road, former Liquid & Envy nightclub

Planning permission has been granted for re-development of the former nightclub site, providing for a small supermarket and approximately 70 apartments. The main building was demolished in 2014, but the listed art deco façade was left. Timescales for the redevelopment of the site are currently unclear.

Figure 36. Station Road Redevelopment (Photo - August 2014)

E - Redhill Station Quarter Regeneration

The multimillion station upgrade and development of land currently used for station parking will bring substantial benefits to passengers, demonstrate the importance of Redhill as a key transport hub, and create a new pedestrian-friendly gateway to the town centre.

The station will have a new ticket office, larger concourse area and more ticket machines. It will also provide step free access from a new pedestrian only public space at the front of the station to the platforms. The station improvements are being funded by the redevelopment of the station car park areas, which will deliver a new Waitrose foodstore, smaller retail units and approx. 150 new homes for town centre living. Additional station car parking will be provided in a multi-storey car park on the eastern side of the station off Redstone Hill, along with improved cycle provision. A drop-off area will be incorporated on the town side with a taxi rank and pick up/drop off area created on the eastern side. The pedestrian underpass between Redstone Hill and Marketfield Way will also be refurbished.

Initial works started in March 2014 and focused on the rear of the station; however, as of March 2016 the main works had not commenced. Planning permission has been secured.

13.2.2. Memorial Park Improvement Project

A £1.4 million makeover was undertaken during summer 2014. This included widening paths to improve accessibility for pedestrians and cyclists, opening up the views into the park from the corner of Princess Way and London Road, and smartening up the boundaries to improve the visual impact of the park. In addition, Memorial Park now offers:

- a new cafe pavilion with toilets and outdoor seating area;
- a new children's play area in a more central location;
- a sports zone with refurbishment of the existing tennis court and multi-use games area, a new tennis court added and a trim trail and walking/jogging route.

The Council has observed an increase in the numbers of parents using the park since the improvements, but count data is not available, and it is unknown whether visitors are also using the park more.

13.3. Change in profile of visitors and use of the town centre

During the research period for this study, there have been some significant changes in how people use the town centre, in terms of journey purpose and frequency of visits. The role of the recent transport investment in driving these changes is explored in Chapter 16.

The results presented below, are primarily drawn from the:

- the town centre user survey – based on comparison of responses from two separate samples of respondents with different sample characteristics; and
- the residents panel of retained respondents, where any changes between the before and after surveys represent a real change in behaviour, weighted to be representative of the wider population.

13.3.1. Change in profile of town centre visitors

Results from the town centre user survey show significant changes in the profile of town centre visitors following the recent transport investment. In general, those visiting the town centre at the time of the after surveys were:

- more likely to be female; more likely to be aged under 30 (and less likely to be over 60); and more likely to be in full time work;
- less likely to be on a very low income (under £10,000); and
- less likely to have a physical disability or other impairment.

These differences were found to be statistically significant. Hence, while some change may be due to the willingness of particular individuals to be interviewed, the results suggest that there has been a real change in the profile of town centre visitors. These differences may influence perceptions regarding transport accessibility, which will need to be considered when interpreting the study findings.

However, there was **no significant change in the characteristics most likely to affect travel behaviour**:

- distance travelled to the town centre (approx. 6 out of 10 visitors live within 3kms, and almost three-quarters live within 5kms, i.e. within walking / cycling distance of the town centre);
- access to a car or van (approx. two-thirds of visitors have access to a car); and
- size of travel group (approx. two-thirds travel alone).

Corridor profile differences (counterfactual analysis) – Town centre users living in the Northern Corridor (with higher exposure to LSTF measures) show similar profile characteristics (in terms of gender, age, working status, access to a car, and size of travel group) to those living elsewhere in Redhill – based on the characteristics of respondents in the 'after' survey. This suggests that any corridor comparison of outcomes, based on after only results, are unlikely to be driven by profile differences.

However, the profile characteristics of respondents in the before survey differed significantly between the two geographical areas. The change in age and gender profile, described in the above paragraphs, is largely the result of change in the profile of respondents living in the Northern Corridor. This corridor saw a large (significant) reduction in those aged 60+ (37% *before*, 20% *after*) and a substantial (and significant) increase in the proportion of female respondents (57% *before*, 68% *after*); compared with relatively little change in the counterfactual corridor to the south and west of the town centre. These age and gender differences need to considered when interpreting change in outcomes at a corridor level, as part of any counterfactual analysis undertaken. There are no significant longitudinal differences between the two corridors in terms of other characteristics affecting travel behaviour, namely access to a car, and size of travel group.

13.3.2. Journey purpose

A high proportion of visits to the town centre are for convenience / food shopping; and the town centre user survey shows a significant increase amongst this group (63% *before*, 73% *after*). These results are consistent with the high proportion of very frequent visitors (in both the *before* and after samples), suggesting that many users are visiting Redhill to do their 'weekly grocery shop' and are using Redhill for other convenience shopping in the same way they might use local neighbourhood shops – a conclusion supported by the findings of the *before* focus group sessions.

The results also show an increase in the proportion visiting for comparison shopping, services / personal business, and leisure, suggesting that more **visitors are now using Redhill Town Centre for multiple trip purposes**. The average number of purposes identified by each respondent was 1.6 in the *before* sample, and 1.9 in the *after* sample. The specific reasons for this trend are unclear.

13.3.3. Time spent in town centre (daytime)

Time spent in the town centre has remained the same over the period of research, with no significant differences observed between the two survey periods. The most common dwell time reported by town centre users is 1-2 hours (38% before, 39% after).

13.3.4. Frequency of visits (daytime)

The vast majority of town centre users and residents (more than three-quarters) visit the town centre at least once a week during the daytime (in both the *before* and *after* scenarios), i.e. very frequently.

Town centre users

Responses to the question 'compared with a couple of years ago, do you now visit the town centre more or less frequently, during the day?' (Table 28) shows an increase in reported frequency of daytime visits overall, with a net increase in the proportion of frequent visitors of +19% (% of more frequent responses - % of less frequent responses) in the after survey. A similar net increase was reported amongst those living within Redhill (+17%) and those living further afield (+19%).

It is worth noting that the corresponding results from the before survey (all respondents) show a stagnant trend during the years prior to the LSTF investment, with most visitors reporting no noticeable change (73%), and a net change in the proportion visiting more frequently of just +3%.

A comparison of responses to 'how often do you visit Redhill town centre during the day?' across the before and after samples of respondents (Figure 37) shows:

- a significant increase in moderate and occasional visitors amongst those living within Redhill (6% *before*, 11% *after* visit up to three times a month); and
- an increase in moderately frequent visitors (16% *before*, 23% *after*) amongst those living further afield.

Given that respondents from both areas said that they were now visiting more frequently, these results can be interpreted as an increase in the absolute number of moderately frequent and occasional visitors, rather than a reduction in the absolute number of very frequent visitors (who make up the majority of visitors). In other words, existing 'very frequent' visitors are not necessarily visiting more frequently, but there are now more people visiting on a more infrequent basis – up to three times a month for those living within 3kms*, and up to once a month for those living further afield. Those who used to visit often *before* the works are continuing to do so; but now form a smaller proportion of visitors from outside Redhill.

This suggests that **Redhill is now attracting new visitors, who see the town centre as a more attractive destination than previously**. Those who used to visit often before the works are continuing to do so; but now form a smaller proportion of visitors from outside Redhill.

**Comparing results on a corridor basis (to inform the counterfactual analysis) shows that this trend is confined to those living in the counterfactual corridor to the south and west of the town centre; with those living in the Northern Corridor reporting no significant change.*

Residents panel

Results from the residents survey (based on a retained sample) are less positive, with only marginal overall change.

When asked directly in the after survey whether they were visiting more or less frequently (Table 28):

- 57% reported no change, but a net proportion (4%) reported a decrease;
- most reporting a change described it as 'little' (rather than 'a lot').

It is worth noting that the corresponding results from the before survey also show a declining trend, with a net proportion of 7% reporting to be visiting less frequently during the year before the commencement of the LSTF works.

Comparison of responses given in the before and after surveys to the question 'how often do you visit Redhill town centre during the day?' (Figure 37) shows little change across the three categories of frequency. Cross-tabulation of before and after results shows that 75% of respondents reported the same frequency, 12% reported an increase and 13% reported a decrease, resulting in a net increase in less frequent visitors of just 3 residents – *effectively no overall change*.

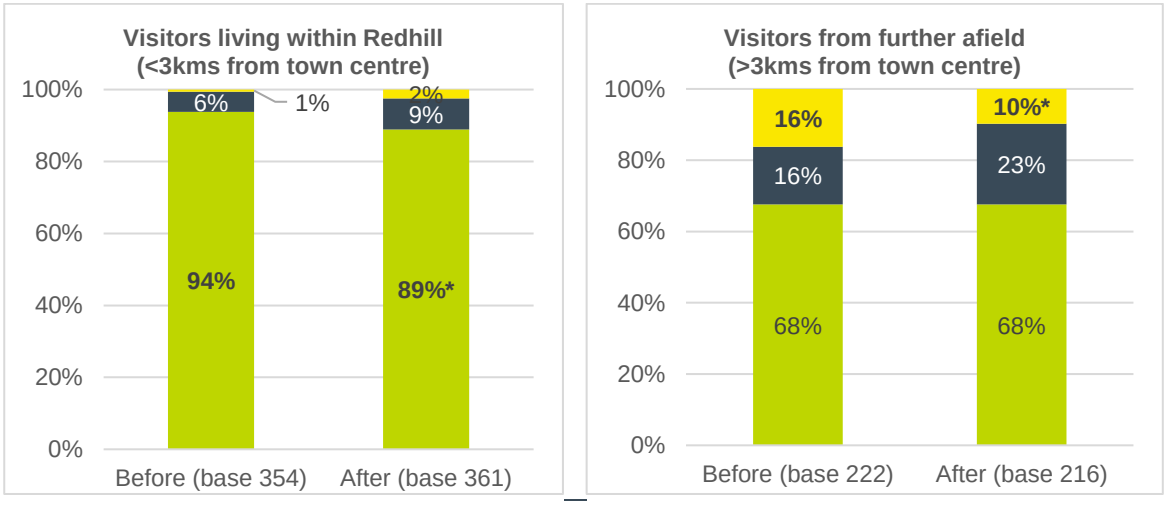
Table 28. Compared with a year ago, do you now visit the town centre more or less frequently during the daytime

	Town centre users		Residents panel	
	Before	**After**	**Before**	**After**
More (A lot more / A little more frequently)	15% (7%, 8%)	32% (22%, 10%)	13% (5%, 8%)	20% (3%, 17%)
Less (A lot less / A little less frequently)	12% (4%, 8%)	14% (7%, 7%)	21% (7%, 14%)	23% (7%, 16%)
No noticeable change	73%	55%	66%	57%
Base	**657**	**707**	**335**	**335**
Net increase (% more - % less)	**+3%**	**+19%**[1]	**-7%**	**-4%**

1. The results are similar when disaggregated by distance: +17% for those living within 3kms, and +19% for those living beyond 3kms.

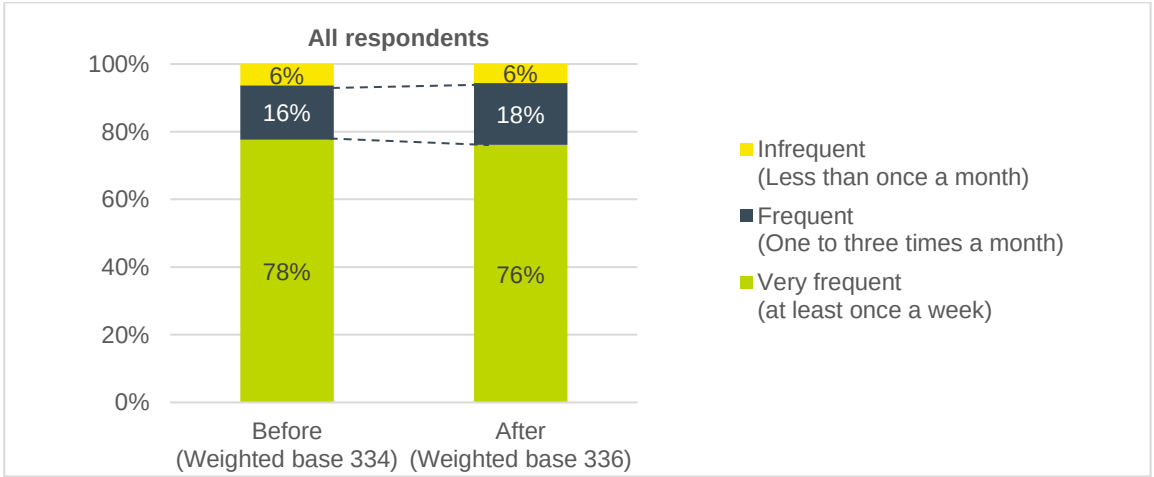
Figure 37. How often do you visit Redhill town centre during the daytime for reasons other than live or work?

a) Town centre users (unweighted)



Significant differences between before and after town centre user results marked with asterix (*).

b) Residents panel (weighted)

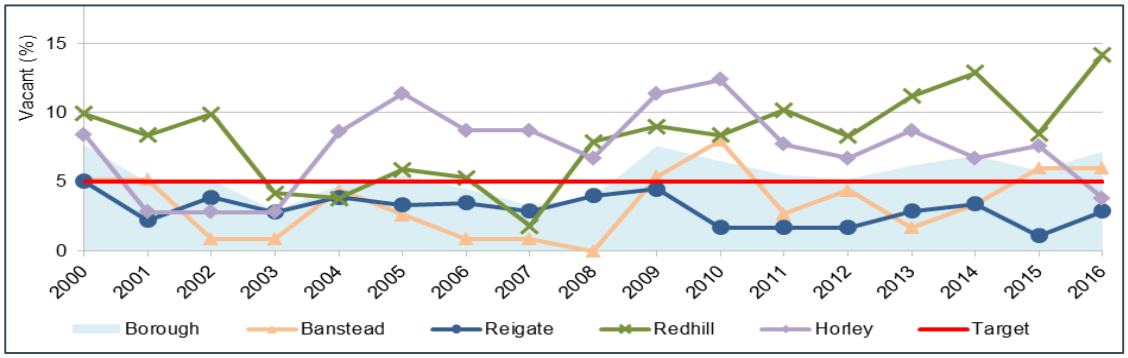


13.4. Local retail performance and context

Catchment area and user profile – The town centre user before survey shows that Redhill has a strong local catchment area, with two-thirds (64%) of respondents living within 5kms of the town centre. The remaining third came from the surrounding neighbourhoods, such as Caterham, Whyteleafe, Purley and Dorking, with very few town centre users travelling more than 10 miles. The town centre is very dependent on office workers, who often visit several times a week, and local office workers. It is estimated that around 90% of those visiting the town centre are visiting The Belfry Centre.

Occupancy rate – The vacancy rates in Redhill fluctuated between 8% and 10% between 2008 and 2012 (the start of the LSTF period), increased to 12.9% in March 2014, before reducing to 8.5% in March 2015, and then increasing again to 14.2% in March 2016 (Figure 38). During 2015 and 2016, the Belfry Centre has been building vacant space to allow for a large new anchor tenant. This has resulted in an increase in the vacancy rate.

Figure 38. Percentage vacancy rate (2000 – 2016)



Reigate and Banstead Town Centre Monitor, March 2016

Footfall data – Average weekly footfall in The Belfry Centre declined by about 4% between 2012 and 2014[46], broadly reflecting the national trend. In addition to the national trend, an expanded Waitrose store opened in nearby Dorking in Summer 2014, and is believed to have attracted affluent shoppers away from Redhill. Furthermore, the implementation of the LSTF / Balanced Network scheme is reported [47]to have caused significant traffic disruption, particularly in the second half of 2014/15, with some retailers reporting a drop in trade.

However, footfall for the period January to March 2015 (at the end of the LSTF period) was up by +2%, bucking the national trend which showed a -1% decline over the same period. In March 2016, The Belfry Centre Manager reported that this trend was continuing, with increases observed on both weekdays and weekends (particularly Sundays, which traditionally been the weakest day of the week).

Retail performance

In both April 2015 and Feb 2016, The Belfry Shopping Centre Manager reported that the local retail economy and retail confidence was improving compared with recent years, evidenced by the following:

- a number of retailers are performing better than their benchmarking equivalents nationally (although larger centres, such as nearby Crawley, were perceived to be recovering faster than smaller centres such as Redhill);
- footfall within The Belfry Centre was increasing, car park usage had almost doubled over a 12 month period, and dwell time had increased[48];
- letting activity in 2015 was higher than in 2013 and 2014;
- a lease had been signed for a new anchor store in The Belfry Centre, with a number of relocated businesses opting for larger units with long term leases.

[46] Based on footfall data provided by The Belfry Centre, and collected by Experian Footfall.

[47] By The Belfry Centre Manger, retailers, and focus group participants interviewed for this study.

[48] Some of the increase in car park usage at The Belfry is likely to have been eroded from other car parks, as access to The Belfry Car Park has been improved as a result of the introduction of the two-way system; however, the increase in dwell time and footfall is positive. Note, no data was provided to demonstrate the scale of change.

Aside from the potential impact of the LSTF / Balanced Network investment (consider in Chapter 16), other factors driving this trend include:

- an increase in office workers, due to businesses expanding their workforce (e.g. Santander) and an increase in the office floorspace occupancy rate;
- visible evidence of redevelopment and regeneration activity, with the closure of Marketfield Way car park (Site A) and work underway at Warwick Quadrant North / Sainsbury's (Site C); and the Liquid and Envy site (Site D), sending positive messages to investors;
- publicity about the redevelopment of the station, incorporating a new Waitrose store; and,
- growth in the national and regional economy.

Retailers interviewed for this study gave a more mixed response regarding the current (Nov 2015) state of the retail economy. Some 9 out of 20 described the local retail economy as growing; but 7 out of 20 described it as declining, describing a tough environment with a large number of vacant units, a large number of charity shops, and low footfall, with people choosing to go to bigger centres to shop instead.

Attractiveness of town centre

Focus group participants (Feb 2016) generally expressed negative or neutral views about whether Redhill had become a more attractive destination in recent years, referring to the poor retail, eating, and night time economy (which are still perceived to be declining). However, the street market (which operates three days a week) was seen as a significant asset, and the perceptions of some participants were tempered by their awareness of the recent works within the town centre aimed at improving the look and feel of the area[49].

[49] As shown in Chapter 16, the recent transport and environment changes are perceived by survey respondents to have had a positive influence in promoting Redhill Town Centre as a destination, with 49% of town centre users and 60% of residents describing the impact as 'a little' or 'a lot'.

13.5. Wider transport context

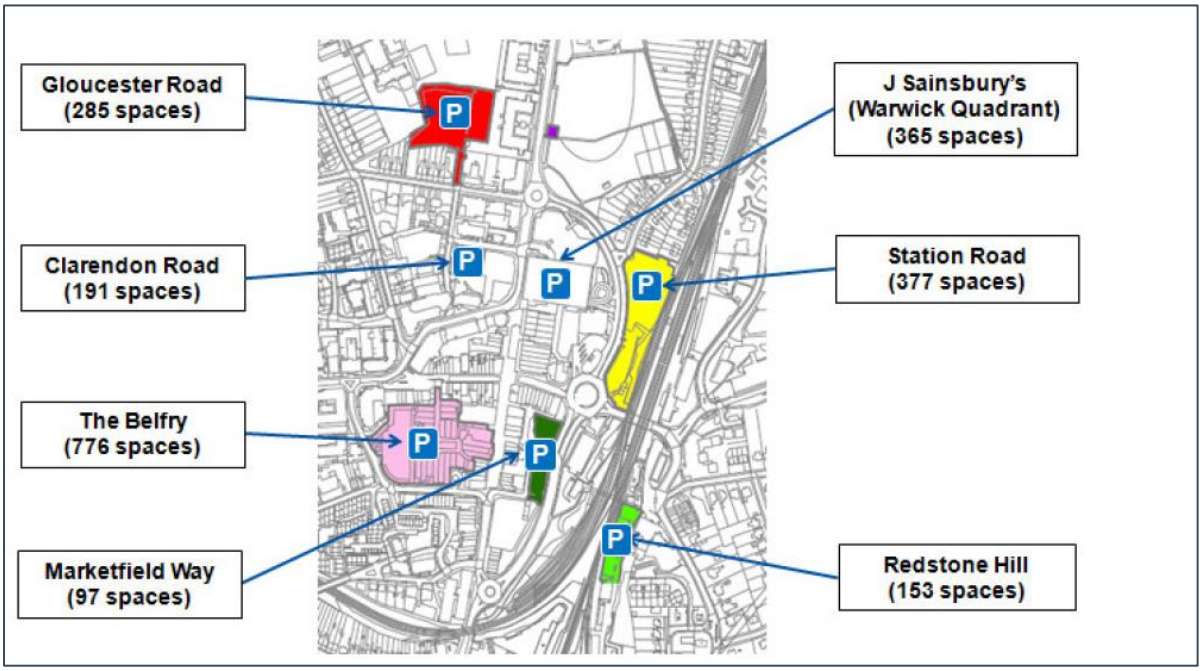
13.5.1. Highway network

Redhill has excellent strategic road connections, served directly by the A25 and A23, with the M25 and M23 close by; but the town centre has historically suffered from congestion and high volumes of through traffic; and a poor public realm. The town had received relatively little transport investment prior to the LSTF and Balanced Network Schemes.

13.5.2. Parking

Redhill town centre currently has six public car parks providing capacity for over 2,000 parking spaces, mainly in multi-storey car parks (predominantly privately operated). There is also a significant amount of on-street parking near the town centre. Marketfield Way Car Park was closed in 2015 to make way for proposed development.

Figure 39. Location of off-street car parking in Redhill



Source: www.reigate-banstead.gov.uk/Images/008-GD31110-GDF-03%20Redhill%20Stage%203_tcm9-46418.pdf
Linkfield Corner car park, to the west of the Town Centre, is not included in the above figure and has 56 spaces.

A comprehensive car park survey undertaken in 2008 showed high levels of parking availability, with 36% of the sampled off-street parking spaces were unused during the peak parking period (12:00-14:00).[50] There is still perceived to be high levels of parking availability at all times.

13.5.3. Public transport

Redhill boasts excellent rail links, with London, Gatwick and Brighton in particular. Both Southern and First Great Western operate services through Redhill. There are long term proposals for construction of a new platform (Project Zero) which will enable significant improvements to train operations.

Redhill has good bus links into the Town Centre and the current Bus Station is located on Princess Way. The bus station underwent a £650,000 refurbishment in 2008 which included better lighting and CCTV coverage, a new waiting room with an electronic passenger information system, new ticket office, and public realm improvements. Through the Balanced Network Scheme, most stops in the town centre have recently been upgraded.

[50] Reigate & Banstead Borough Council - Redhill Town Centre Parking Options: Stage 2: Parking Matrix

Three bus companies are responsible for the buses which operate in Reigate and Banstead, though TfL operate Route 405 which connects Redhill with West Croydon (and offers much lower fares, with a flat fee of £1.50).

Southern Railway and a number of bus operators recently introduced the keyGo smartcard in 2014 which can be used on trains, buses, trams and London Underground. It allows customers to pay for their journey via a top up system - similar to the Oyster Pay as You Go system used by TfL.

13.5.4. Active travel (walking and cycling)

Pedestrian and cycle links

Redhill has various sections of off-road/segregated routes. National Cycle Network Route 21 from Croydon to Redhill passes through the attractive North Downs.

The LSTF package is focused on filling gaps and upgrading signs and surfacing to make the most of the existing infrastructure, primarily targeted in the northern corridor.

Key remaining gaps (following completion of the LSTF and Balanced Network Schemes) include:

- Lack of pedestrian facilities on the A25 London Road / Linkfield Lane junction – a busy walking route to the northwest of the town centre;
- cycling and walking links to the south of the town centre;
- the quality of the walking and cycling environment through the railway under-bridge on Redstone Hill.

Trends in walking and cycling (Active People Survey)

Evidence from the DfT's Active People Survey shows that levels of walking for utility purposes in Reigate & Banstead Borough are comparable with those for the South East, but lower than the national average. Comparison of data for 2012/13 and 2013/14 shows a **significant increase in levels of walking at a national and regional level** (e.g. a 2.0% increase in the proportion walking three times a week in the South East); however, the sample size for Reigate & Banstead is insufficient to determine whether a similar increase has been replicated in Redhill.

The survey also shows that levels of cycling for utility purposes in Reigate & Banstead Borough are much lower than levels of walking (reflecting the findings of the primary research). In 2012/13, levels of cycling in Reigate & Bansted were much lower than those for the rest of the South East and across England. However, **between 2012/13 and 2013/14 level of cycling activity in Reigate & Banstead increased significantly** (e.g. by +1.3% for those cycling at least three times a week); against a more neutral trend at a regional and national level. As a results, levels of cycling activity in 2013/14 were much closer to the regional and national averages, although still slightly lower overall.

Table 29. Proportion of residents who walk and cycle (any length) for utility purposes at a given frequency

	Walking 3 times a week			Cycling 3 times a week		
	2012/13	**2013/14**	**Increase**	**2012/13**	**2013/14**	**Increase**
Reigate & Banstead	33.2%	30.7%	-2.5%	0.3%	1.6%	**1.3%***
South East	28.7%	30.7%	**2.0%***	2.8%	2.7%	-0.1%
England	30.2%	33.0%	**2.8%***	2.6%	2.6%	0.0%

**Significant change in proportion of residents.*

The above results show evidence of an increasing trend in levels of cycling within the borough, suggesting that there is a likelihood that some increase in cycling would have occurred to / within the town centre, with or without the LSTF / Balanced Network investment.

13.5.5. Post LSTF investment in sustainable travel

There was no on-going LSTF revenue funding in 2015/2016 in Redhill.

However, funding was secured from the Coast 2 Capital Local Enterprise Partnership for a package of walking, cycling and bus improvements providing better connectivity between towns and settlements within the Redhill/Reigate to Horley/Gatwick areas, and interlinking with the Horley Master Plan infrastructure improvements (i.e. routes south of the town centre). The total cost of the package is £4.90 million. The improvements were scheduled to be delivered between 2015/16 and 2017/18, but are not expected to have influenced the survey findings in any way.

13.6. Summary

The above chapter identifies the following changes in the external environment, which may have affected frequency and use of the town centre, perceptions of accessibility, or travel patterns to date, aside from any impacts relating to the LSTF / Balanced Network investment.

Town centre regeneration

- There are five major opportunity sites in the town centre. Works associated with the re-development of Sainsbury's (Site C) commenced started in Summer 2014 and Marketfield Car Park (Site A) closed in 2015 (both during the period between the two survey phases). Neither of these changes are expected to have had a substantial impact on frequency and use of the town centre, perceptions of accessibility, or travel patterns to date.

- In addition, Memorial Park received a £1.4 million makeover in summer 2014. Council officers have observed an increase in the number of parents visiting the park since the improvements, but no count data is available.

Change in profile of visitors and use of the town centre

- During the research period for this study, there have been some significant changes in how people use the town centre, in terms of journey purpose and frequency of visits.

- Results from the town centre user survey suggests that there has been a significant change in the profile of visitors in terms of gender, age, and employment status, which may influence perceptions regarding transport accessibility. The changes are significant suggesting that they represent a real change in the profile of visitors, alongside any changes due to willingness of individuals to take part in the survey.

  However, there was no significant change in the characteristics most likely to affect travel behaviour: distance travelled to the town centre; access to a car or van; and size of travel group. Approx. 6 out of 10 visitors live within 3kms, and almost three-quarters live within 5kms, i.e. within walking / cycling distance of the town centre.

  Comparison of the profile differences between respondents in the Northern Corridor and those living elsewhere in Redhill, was limited to an analysis of access to a car or van, as this is considered the most relevant characteristic likely to affect mode choice. The analysis shows no significant difference between the two areas.

- Results from the town centre user survey show an increase in the proportion visiting for convenience shopping, comparison shopping, services / personal business, and leisure, suggesting that more visitors are now using the town centre for multiple trip purposes.

- Time spent in the town centre has remained the same over the period of research, with no significant differences observed between the two survey periods[51]. The most common dwell time is 1-2 hours.

- In terms of frequency of visits, there is evidence that Redhill is now attracting new visitors, who see the town centre as a more attractive destination than previously; but some contradictory evidence regarding change in frequency of visits amongst those living within Redhill:

  - A net proportion of town centre users (+19%) reported that they are now visiting the town centre more frequently than a couple of years ago (with similar results obtained for those living within and beyond 3kms). In comparison, the period prior to the recent investment showed a more stagnant trend, with most visitors reporting no noticeable change (73%), and a net change in the proportion visiting more frequently or just +3%.

[51] However, the Shopping Centre Manager reported an increase in length of stay at The Belfry Car Park, but no data was provided to demonstrate the scale of change.

Those who used to visit often before the recent transport changes works are continuing to do so, but there are now more people visiting on a more occasional basis – up to three times a month for those living within 3kms*, and up to once a month for those living further afield.

**Corridor analysis shows that this trend is confined to those living in Other Corridors; with those living in the Northern Corridor reporting no significant change.*

- Results from the residents survey (based on a retained sample) are less positive, with only marginal overall change. When asked directly, some 57% reported no change, but a net proportion (4%) reported a decrease. Comparison of responses given in the before and after surveys to the question 'how often do you visit Redhill town centre during the day?' shows little change across the three categories of frequency, with 75% of respondents providing the same response in both surveys.

- The role of the recent transport investment in driving the above changes is explored in Chapter 16.

Local retail performance and context

- There are mixed views regarding the state of the local retail economy / retailer confidence, post LSTF / Balanced Network investment. The Shopping Centre Manager reported an improving environment compared with recent years, evidenced by the performance of individual retailers; increasing footfall, car park usage, and dwell time; and increased letting activity, including signing of a lease for a new anchor store. Similarly, 9 of the 20 retailers interviewed described the economy as improving.

- Aside from the potential impact of the LSTF / Balanced Network investment (considered in Chapter 16), other factors driving this trend include: an increase in office workers, due to businesses expanding their workforce and an increase in the office floorspace occupancy rate; visible evidence and publicity about redevelopment and regeneration activity, sending positive messages to investors; and, growth in the national and regional economy.

- However, 7 out of 20 retailers interviewed described the local economy / retailer confidence as declining, describing a tough environment with a large number of vacant units, a large number of charity shops, and low footfall, with people choosing to go to bigger centres to shop instead.

- Furthermore, focus group participants (Feb 2016) generally expressed negative or neutral views about whether Redhill had become a more attractive destination in recent years, referring to the poor retail, eating, and night time economy (which are still perceived to be declining). However, the perceptions of some participants were tempered by their awareness of the recent works within the town centre.

Wider transport context

- In addition to the Balanced Network Scheme:

  - Marketfield car park (approx. 100 spaces) closed in early 2015
  - Southern Railway and a number of bus operators introduced the keyGo (pay as you go) smartcard in 2014 which can be used on trains, buses, trams and London Underground.

- The DfT's Active People Survey shows evidence of an increasing trend in levels of cycling within the borough or region, suggesting that there is a likelihood that some increase in cycling would have occurred in Redhill, with or without the LSTF / Balanced Network investment. However, the survey showed no significant change in levels of walking within the borough.

Wider economic trends

- There has been a general improvement in the economy across Surrey in recent years, suggesting that some improvement in the retail economy in Redhill is likely to have occurred anyway[52]:

  - Unemployment declined 71% across Surrey between 2010 and 2015 (Reigate & Banstead 66%, Woking 74%, and Guildford 72%).

[52] LSTF Outcomes Report (SCC, March 2016).

- The number of active businesses across Surrey increased by 8% between 2010 and 2014 (Reigate & Banstead 9%, Woking 12%, and Guildford 5%).
- Property vacancies in Redhill reduced 11.7% in 2010 to 8.6% in 2015 for offices, and from 7.8% to 2.6% for industrial property.

Other contextual factors

- The Watercolour and Park 25 housing developments (located just north of the town centre) have increased the number of people living near the town centre. A large number of these new residents commute to London and Brighton, and are likely to stay in these locations in the evening rather than returning to Redhill for social and leisure activities. This may change as the proposed developments come on line.

- Westfield has secured planning permission for a new £1 billion shopping centre in nearby Croydon, due to come on-stream in 2018 (beyond the timescales for this study). This is likely to have a major impact on Redhill which will need to reaffirm its position as a local convenience destination.

14. Impact – Perceptions

14.1. Introduction

This chapter examines the impact that the sustainable travel investment has had on:

- general perceptions regarding access to the town centre by sustainable modes;
- awareness of LSTF initiatives;
- impact of LSTF investment on perceptions of access to the town centre; and
- perceptions regarding the effectiveness of specific LSTF initiatives.

The primary evidence sources are the town centre user survey and the residents survey; with evidence from the focus groups and stakeholder interviews used to add depth and context to the survey results.

For the town centre users, change in perceptions are based on comparison of responses from two separate samples of respondents with different sample characteristics (see Chapter 13.3), which may influence the observed level of change. Confidence intervals (based on 95% probability) have been calculated to determine whether differences in the before and after samples represent a statistically significant difference in the wider population. Statistically significant differences are marked with an asterix (*) or 'sig'.

For the residents survey, before and after responses are based on the same sample of residents. Any changes reported between the before and after surveys therefore represent a real change across the sample of respondents interviewed, weighted to be representative of the wider population[53]. Nevertheless, the panel of respondents do represent a sample of the population, and confidence intervals are still useful to understand how the overall response proportions compare to the true population. Confidence intervals (based on 95% probability) have therefore been calculated to determine whether real differences in the before and after samples are sufficiently large to indicate a significant change in the wider population. Statistically significant differences are marked with an asterix (*) or 'sig'. See Section 2.3.1 for further information.

[53] Note, however, the before and after surveys were undertaken at different points of time, and the robustness of the results relies on resondents answering in a consistent and accurate manner.

14.2. General perceptions regarding access to the town centre by sustainable modes

Town centre users and resident survey respondents were first asked about their general perceptions regarding access to the town centre. No specific reference was made to any of the recent sustainable travel measures at this stage.

14.2.1. Perceptions amongst those familiar with sustainable travel options

Overall, the majority of town centre users and residents who felt that they had sufficient knowledge to comment (i.e. excluding 'don't knows') had positive perceptions of accessibility:

- Well over half of town centre users and residents described access as 'easy' for each of the modes in question, in both the *before* and *after* surveys.
- Access by foot was perceived to be easiest, followed by bus then cycle.
- Town centre users living in the Northern Corridor (with higher exposure to LSTF measures) reported similar perceptions to those living in elsewhere in Redhill regarding access by bus and foot, but less favourable perceptions regarding cycling in both survey periods.

Before and after changes are interpreted in the sections below.

Table 30. In general, how easy would you say it is to access the town centre by the following modes? (Excluding don't knows)

Town centre users (unweighted)

CAPI On-street	Bus – within 5 kms only		Cycle – within 5 kms only		Walk – within 3 kms only	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	79%	77%	60%	61%	82%	82%[1]
Neither easy or difficult (3)	8%	8%	**18%**	**8%***	5%	7%
Slightly difficult (2) or very difficult (1)	13%	15%	**22%**	**31%***	13%	11%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Base	**356**	**315**	**239**	**218**	**323**	**334**
Mean perception score[2]	**4.06**	**4.09**	**3.57**	**3.37***	**4.16**	**4.29***

1. Masks a sig. increase in 'very easy' responses (from 58% to 66%), and a sig. reduction in 'fairly easy' responses (from 24% to 16%).
2. Shading based on mean score: light green = 3.0-3.5; mid green = 3.5-4.0; dark green = 4.0-4.5.
Significant differences between before and after results marked with asterix (*).

Residents panel (weighted)

CATI Telephone	Bus		Cycle		Walk	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	76%	77%	76%	71%	84%	83%[1]
Neither easy or difficult (3)	13%	10%	15%	13%	6%	6%
Slightly difficult (2) or very difficult (1)	11%	13%	9%	16%	10%	11%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Weighted base	**175**	**175**	**163**	**163**	**268**	**268**
Mean perception score[2]	**4.11**	**4.09**	**4.04**	**3.86**	**4.23**	**4.29**

1. Masks an increase in 'very easy' responses (from 52% to 60%), and a sig. reduction in 'fairly easy' responses (from 32% to 23%).
2. Shading based on mean score: light green = 3.0-3.5; mid green = 3.5-4.0; dark green = 4.0-4.5.
Significant differences between before and after results (with respect to the wider population) marked with asterix (*).

14.2.2. Perceptions amongst all respondents (including don't knows)

A substantial number of residents (up to 48%) felt unable to comment, and provided a 'don't know' response. Lack of awareness or understanding is likely to act as a barrier to the future use of sustainable modes (particularly cycling) for these individuals.

Surprisingly, the proportion of 'don't knows' increased in the after survey for all modes. The reason for this is unclear, but could reflect a reluctance to participate[54]. It is worth noting that amongst the retained sample of residents, different respondents stated 'don't know' in the before and after surveys, suggesting a lack of consistency and accuracy in the responses given by some individuals. This suggests that the results do not fully represent the views of all those interviewed; but are still considered to be broadly representative.

Before and after changes are interpreted in the sections below.

Table 31. In general, how easy would you say it is to access the town centre by the following modes? (Including don't knows)

Town centre users (unweighted)

CAPI On-street	Bus – within 5 kms only		Cycle – within 5 kms only		Walk – within 3 kms only	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	**67%**	**58%***	34%	31%	75%	76%[1]
Neither easy or difficult (3)	7%	6%	**10%**	**4%***	4%	7%
Slightly difficult (2) or very difficult (1)	11%	11%	13%	16%	12%	10%
Don't know (0)	**14%**	**26%***	43%	48%	9%	8%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Base	416	423	416	423	354	362
Mean perception score[2]	**3.47**	**3.04***	**2.05**	**1.74***	**3.79**	**3.96***

1. Masks a sig. increase in 'very easy' responses (from 53% to 61%), and a sig. reduction in 'fairly easy' responses (from 22% to 15%).
2. Shading based on mean score: pale yellow = 1.0-2.0; yellow-green = 2.0-3.0; light green = 3.0-3.5; mid green = 3.5-4.0; etc. 'Don't know responses excluded from score calculation.
Significant differences between before and after results marked with asterix (*).

Residents panel (weighted)

CATI Telephone	Bus		Cycle		Walk	
	Before	After	Before	After	Before	After
Very easy (5) or fairly easy (4)	49%	50%	**51%**	**42%***	73%	69%[1]
Neither easy or difficult (3)	8%	7%	9%	7%	6%	5%
Slightly difficult (2) or very difficult (1)	10%	9%	10%	11%	12%	9%
Don't know (0)	33%	34%	29%	40%	10%	17%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Weighted base	336	336	336	336	336	336
Mean perception score[2]	**2.65**	**2.69**	**2.74**	**2.29**	**3.70**	**3.55**

1. Masks an increase in 'very easy' responses (from 44% to 50%), and a sig. reduction in 'fairly easy' responses (from 29% to 19%).
2. Shading based on mean score: pale yellow = 1.0-2.0; yellow-green = 2.0-3.0; light green = 3.0-3.5; mid green = 3.5-4.0; etc. 'Don't know responses excluded from score calculation.
Significant differences between before and after results (with respect to the wider population) marked with asterix (*).

[54] For both surveys (especially the residents) it proved challenging to achieve the target sample sizes for the 'after' period, despite using the same methodology for both waves. Respondents may simply have said 'don't know' to get through the interview quickly.

14.2.3. Ease of access by bus

Town centre users – Perceptions amongst those familiar with bus as a travel option and living within 5kms of the town centre (the target LSTF market) were high in both the before and after samples - 79% before, 77% after described access as 'easy' *(not significantly different)*.

These percentages drop to around two-thirds (67% *before*, 58% *after, sig*), when considering all town centre users (including 'don't knows'). Significantly more respondents stated 'don't know' in the after survey (14% *before*, 26% *after*), resulting in a significant decrease in the proportion describing access as 'easy'; but there was no change in the proportion describing access as 'difficult'.

Corridor comparison (counterfactual analysis) - Neither corridor experienced a statistically significant change in perceptions of access by bus between the before and after periods. Sample sizes by corridor were relatively small, varying from 112 to 152, limiting the likelihood of identifying a statistically significant change.

Residents – Overall, perceptions of ease of access by bus have remained largely unchanged amongst all residents, including 'don't knows' (49% *before*, 50% *after* described access as 'easy'); and amongst those who felt that they had sufficient knowledge to comment in both survey waves (76% *before*, 77% *after* described access as 'easy').

Overall – Overall, there is no evidence to suggest that town centre users or residents perceive there to have been a general improvement in access to the town centre by bus.

Lack of public transport information, or lack of awareness of the information available, was identified by focus group participants as a key barrier to greater bus use.

14.2.4. Ease of access by walking

Town centre users – Comparison of *before* and *after* results suggests that there has been a **positive shift in people's perceptions regarding the general quality of the walking environment**.

Perceptions amongst those familiar with walking as a travel option and living within 3kms of the town centre (the target market for mode shift) were high in the *before* sample, with the vast majority describing access for pedestrians as 'easy' (82%). Perceptions further improved in the *after* survey, with a significant increase in the proportion describing walking as 'very easy' (58% *before* to 66% *after*); although the overall proportion describing access as 'easy' remained at 82%.

Only a small proportion (less than 10%) of all town centre users stated 'don't know', indicating a high level of familiarity with walking as an option. As a result, the trend amongst all respondents was similar to that described above.

Corridor comparison (counterfactual analysis) – Comparison of before and after results by corridor shows no significant differences in perceptions amongst those living in the two corridors. Sample sizes by corridor varied from 130 to 202.

Residents – Perceptions amongst residents who felt that they had sufficient knowledge to comment also show a **similar improvement in the quality of the walking environment**, with a notable and real shift between 'fairly easy' and 'very easy' responses (52% before and 60% after described access as 'very easy', but the overall proportion describing access as 'easy' remained the same).

Around two-fifths of all respondents changed their perception, with 23% providing a more positive response compared to 16% providing a more negative response.

Overall – Overall, the survey evidence suggests that there has been a positive shift in people's perceptions of the general quality of the walking environment. However, access by foot was already perceived to be easier than by bus or cycle, and the improvement was primarily amongst those who already felt that access was 'fairly easy'. The impact on actual behaviour change may therefore be limited (see Chapter 15).

However, results based on a corridor comparison **do not support the hypothesis that additional LSTF investment in the Northern Corridor has improved perceptions of walking to the town centre more than elsewhere**.

Focus group participants felt that while pedestrian facilities have generally been improved within the town centre, more investment is needed across the rest of Redhill.

"I do think they stopped short in the pedestrian elements. If you are walking from the town, all the new stuff just ends, and you still have poor pavements to trip over, it's dangerous…."

14.2.5. Ease of access by cycling

Town centre users – Perceptions amongst those able to comment on cycling as a travel option and living within 5kms of the town centre (the target market for mode shift) were low in before survey, in comparison with other modes. Perceptions **remained low / worsened in the *after* survey**, with more respondents now describing access as 'difficult' (22% *before*, 31% *after, primarily due to an increase in 'very difficult' responses*).

Results for all town centre users show a high level of unfamiliarity with cycling as an option, with almost half of users stating 'don't know' (43% *before*, 48% *after*). Again, the mean score shows a slightly worse situation in the after period.

Corridor comparison (counterfactual analysis) – Comparison of before and after results by corridor shows that the proportion describing access as 'very difficult' increased by +17% in the Northern Corridor compared with +6% in the Other Corridors', although the sample sizes are small (varying from 73 to 112 by corridor) and these changes are not statistically significant.

Residents – Perceptions of ease of access by cycle have become less positive, amongst all residents, including 'don't knows' (51% *before*, 42% *after* described access as 'easy'), and amongst those who felt that they had sufficient knowledge to comment on 'ease of access' in both survey waves (76% *before*, 71% *after* described access as 'easy').

A third of respondents (109, 32%) changed their perception either positively (15%) or negatively (17%), but a net proportion reported a deterioration over time.

The most common change in perceptions was an improvement from 'fairly' to 'very' easy, reported by 21 respondents (6%); however, this was offset by 16 respondents (5%) describing access as 'easy' in the before survey and 'difficult' in the after survey.

Overall – Overall, there is no evidence to suggest that town centre users or residents perceive there to have been a general improvement in access to the town centre by cycle, with perceptions remaining low or worsening in the after survey. A substantial proportion of town centre users and residents stated 'don't know', in the after survey, indicating a general lack of awareness or consideration of cycling as an option, which in itself is a significant barrier to increased levels of cycling.

Results based on a corridor comparison **do not support the hypothesis that LSTF investment in the Northern Corridor has improved perceptions of cycle access to the town centre**.

Focus group participants felt that while additional cycling facilities have been provided within the town centre (and viewed favourably by existing cyclists), cycling routes into the town centre are limited (including in the Northern Corridor where LSTF corridor investment has been focused), and this continues to represent a barrier to increased cycling.

14.2.6. Experience of using different modes

Survey respondents who indicated that they had travelled to the town centre by cycle or walk in the last 12 months were asked to rate, on a scale of 1 to 5, a number of mode-specific attributes. A mean experience score was then calculated for each attribute, based on the scores given (where 1 = very poor and 5 = very strong).

Experience ratings for walking

The experience ratings for walking are summarised in Table 32. It should be noted that the sample sizes for town centre users are very small. These results should therefore be treated with caution, and indicative only.

Town centre users – Town centre users generally rated the various walking indicators at the positive end of the scale in the before survey, leaving little scope for improvement in the after survey. The results show:

- a **significant increase** in the rating for quality of routes on approaches to town centre;
- **no significant change** in quality of environment within the town centre, and personal security; and
- a **significant decrease** in the rating for signage.

Residents – Residents were generally less positive about the various the walking indicators in the before survey. However, in the after survey, they reported real increases in ratings for:

- quality of environment within the town centre, quality of routes on approaches to town centre and signage (all key elements of the LSTF / Balanced Network package).

Table 32. Experience ratings for walking – How would you rate walking for the following?

Town centre users (unweighted)

	Quality of environment (within the town centre)		Quality of routes (approaches to town centre)		Risk of accident		Personal security		Signage	
	Before	After	Before	After	Before	After	Before	After	Before	After
Very or fairly good	77%	83%	**74%**	**85%***	52%	62%	79%	79%	79%	74%
Neither good nor poor	12%	9%	13%	7%	**28%**	**16%***	16%	12%	16%	17%
Fairly poor / very poor	12%	9%	14%	8%	20%	22%	5%	9%	**5%**	**9%***
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Base	95	293	95	293	93	284	95	291	85	269
Mean score	**3.92**	**4.06**	**3.83**	**4.11***	**3.46**	**3.58**	**4.00**	**4.03**	**4.05**	**3.98***
Summary	*No signif change*		*Signif. increase in % good*		*Signif decrease in % neutral (inc in % good)*		*No signif change*		*Signif increase in % poor*	

Significant differences between before and after results marked with asterix (*).

Residents panel (weighted)

	Quality of environment (within the town centre)		Quality of routes (approaches to town centre)		Risk of accident		Personal security		Signage	
	Before	After	Before	After	Before	After	Before	After	Before	After
Very good / fairly good	55%	65%	54%	64%	62%	58%	74%	73%	**56%**	**72%***
Neither good nor poor	20%	27%	20%	23%	19%	28%	20%	21%	34%	25%
Fairly poor / very poor	**24%**	**8%***	**26%**	**13%***	19%	14%	7%	6%	**10%**	**3%***
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Weighted base	148	139	146	138	144	136	148	134	120	112
Mean score	**3.37**	**3.71***	**3.41**	**3.75***	**3.58**	**3.53**	**3.92**	**3.97**	**3.57**	**4.09**
Summary	*Signif decrease in % poor*		*Signif decrease in % poor*		*Inc in neutral responses, but not significant*		*No change*		*Signif increase in % good*	

Significant differences between before and after results (with respect to the wider population) marked with asterix (*).

Overall – The results show improvements in the rating scores for 'quality of environment within the town centre' and 'quality of routes on approaches to town centre', both key elements of the LSTF / Balanced Network package. Residents also reported an improvement in signage. The LSTF package included seven wayfinding totems in the town centre, and at least 20 fingerposts and signs for cyclists on key routes into the town centre.

The ratings scores for risk of accident show an improvement amongst town centre users (but not statistically significant), but a decline amongst residents. The LSTF package included the introduction of wider footways and new crossing facilities on the ring road. However, focus group participants felt that removal of guard railing had created a safety risk by enabling some pedestrians to cross junctions diagonally, away from the formal crossing.

Experience ratings for cycling

There were insufficient cyclists within the samples to provide meaningful results on the cycling attributes.

14.3. Awareness of LSTF initiatives

Town centre users and residents were then asked about their awareness of the various LSTF funded sustainable transport measures (*after* survey only).

Town centre users

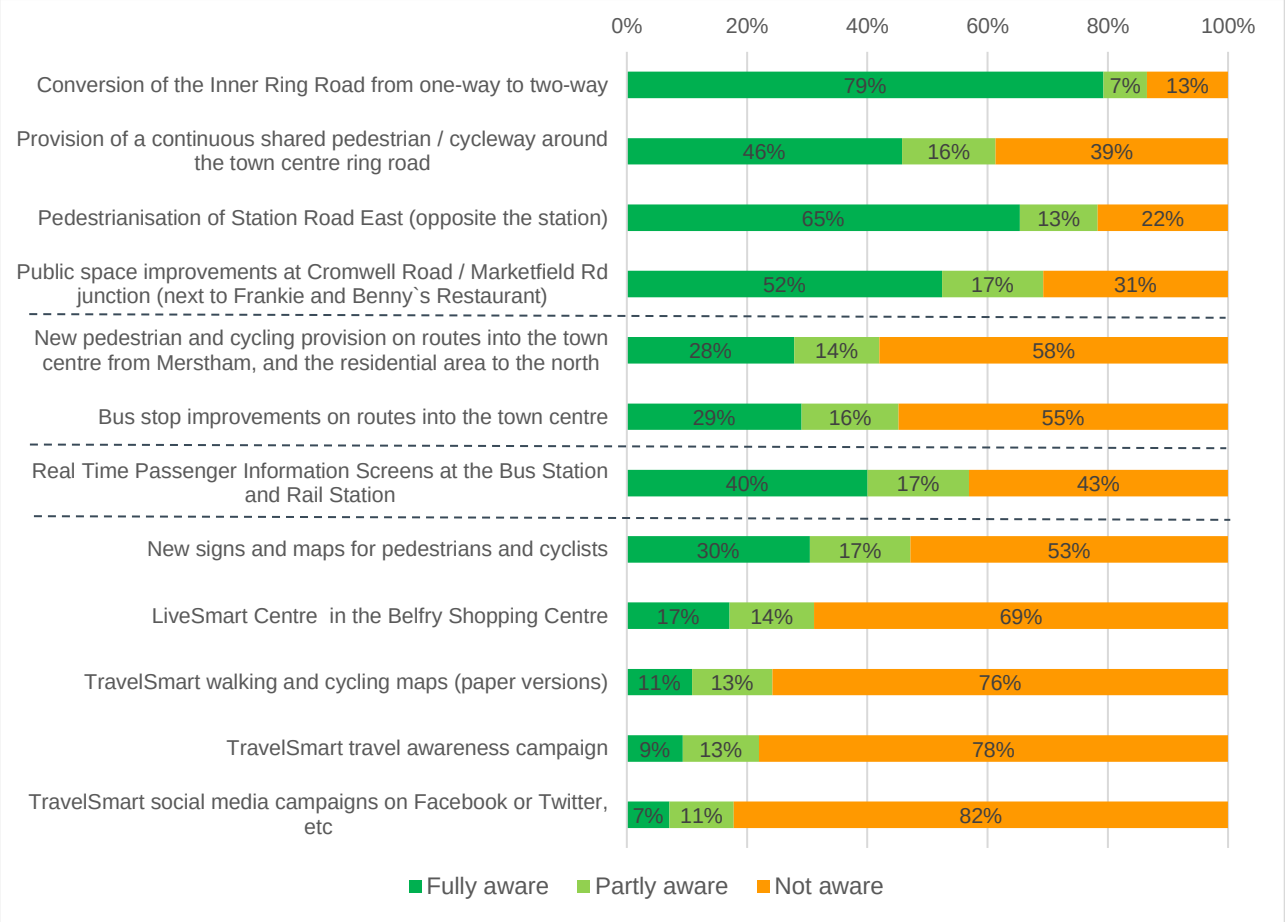
The majority of interviewees in the town centre were partly or fully aware of the main physical changes in the town centre, with at least 60% of people responding in this way, comprising:

- conversion of the Inner Ring Road from one-way to two-way (86%);
- provision of a continuous shared pedestrian / cycleway around the town centre ring road (62%);
- pedestrianisation of Station Road East (opposite the station) (78%); and
- public space improvements at Cromwell Road / Marketfield Road junction (69%).

This is expected as anyone visiting the town centre is likely to have come across one or more elements of the highway works.

There was also a moderately high level of awareness of the real time passenger information screens at the bus and rail stations.

Figure 40. Awareness of LSTF interventions amongst those interviewed in the town centre



Base = 719. First time visitors not asked.

Town centre users were much less aware of interventions on routes into the town centre, which affect a smaller proportion of town centre users and are less visible to car users who account for around half of visitors (<50% in each case). This includes:

- the new walking and cycling routes to the north of the town centre (42%); and
- bus stop improvements on routes into the town centre (45%).

Awareness was even lower regarding the various information and awareness initiatives (< 35% in each of these cases), including those relating to the TravelSmart campaign. This suggests that the level of publicity and the scale of the initiatives has not been sufficient to reach the majority of town centre users (most of whom live in Redhill).

Regression analysis[55] shows that town centre users who live closest (0-3kms vs. >5kms), those who do not have access to a car, and those visiting very frequently were more likely to be aware of the recent transport changes *(awareness_sum)*.

Residents panel

Residents were asked 'are you aware that there have been a number of changes to the road network and facilities for pedestrians, cyclists, and public transport users in the town centre and beyond over the last couple of years?' The vast majority of residents (96%) said that they were fully or partly aware of the recent changes; but only 25% were aware of the TravelSMART travel awareness campaign.

Focus group

Focus group participants had a good level of awareness regarding the most visible changes, such as the introduction of two-way flow on the ring road, the public realm change, and the pedestrian and cycle paths. However, there was a lack of awareness about the shared nature of the paths, with some viewing them as exclusively for pedestrians and others perceiving some sections to be dedicated cycle lanes.

Some participants were aware of the Brompton Bike Lockers at the station, but did not know that they were part of a bike rental initiative and questioned the value of such a scheme in a small town.

There was some awareness of the keyGo smartcard, offered by Southern Rail, but uncertainty about how and where to use it.

None of the participants were aware of the travel smart marketing campaign.

[55] Based on univariate and multiple regression models. The dependent variable (awareness_sum) has been calculated as the sum of the awareness scores for individual measures, where 0 = not aware / don't know, 1 = partly aware, 2 = fully aware. See Appendix A for detailed results.

14.4. Impact of LSTF investment on perceptions of access to the town centre

Town centre users and residents were subsequently asked specifically "what impact have the recent transport schemes in Redhill had on access to the town centre by the following modes?" (Table 33).

At least four-fifths of town centre users and residents stated 'no change' or 'don't know', and **did not perceive the recent transport schemes in Redhill to have had an impact on access to the town centre by walk, cycle, bus, and train**.

However, a net proportion of respondents felt that access by each mode had got 'easier' (% easier - % more difficult), particularly by:

- car (town centre users +15%, residents +20%);
- walk (town centre users +17%, residents +16%); and
- cycle (residents +17%).

Table 33. What impact have the recent transport schemes in Redhill had on access to the town centre, by the following modes? (After only)

Town centre users (unweighted)

CAPI – On street	Car	Train	Bus	Cycle	Walk
Easier	29%	6%	16%	5%	19%[2]
No change	38%	38%	37%	25%	43%
More difficult	14%	3%	5%	5%	2%
Don't know	18%	52%	42%	66%	37%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
% 'easier' - % 'more difficult'	**+15%**	**+3%**	**+11%**	**+0%**	**+17%[2]**

1. Base = 719. Six first time visitors were not asked this question.

2. 17% amongst those living in the Northern Corridor (base = 145), 26% amongst those living elsewhere in Redhill (base = 215). This represents a statistically significant difference. It corresponds to a net improvement of +12% in the Northern Corridor and +25% amongst those living elsewhere in Redhill.

3. There are no significant differences between the two corridors for bus and cycle. No corridor comparison has been undertaken for car and train.

Residents panel (weighted)

CATI - Telephone	Car	Train	Bus	Cycle	Walk
Easier	41%	6%	9%	19%	17%
No change	28%	34%	32%	22%	63%
More difficult	21%	1%	5%	2%	1%
Don't know	10%	59%	54%	57%	20%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
% 'easier' - % 'more difficult'	**+20%**	**+5%**	**+4%**	**+17%**	**+16%**

1. Base = 336.

These results might suggest that the positive shift in people's perceptions of walking to the town centre reported in Section 14.2, can be attributed to the recent LSTF investment. However, corridor analysis shows that the proportion of town centre respondents reporting that walking to the town centre has got easier as a result of the recent transport investment is lower amongst those living in the Northern Corridor (17%) than amongst those living elsewhere in Redhill (26%, *a significant difference*). Although the question was intended to capture the whole journey, these results may be influenced by positive perceptions regarding the changes within the town centre itself. Nevertheless, the results do not support the hypothesis that LSTF

investment in the Northern Corridor has improved perceptions of walking to the town centre more than elsewhere.

The results for cycling show a net improvement amongst residents[56] (+17%) - more positive than the general perceptions reported in Section 14.2. However, town centre users report no change (+0%), with no significant differences in the results for the two corridors analysed.

Regression analysis

Regression analysis[57] undertaken using the town centre user survey data shows some socio-demographic differences in the perceived impact of the recent transport investment on town centre access (easier, no change / don't know, more difficult; *accessimpact_sum*). Men perceived the impact on town centre access slightly more positively than women, although the effect was very modest. Younger participants also perceived the impact on town centre access to be more positive than older participants.

Access to a car, and behavioural characteristics such as distance travelled and frequency of visit were not found to be significant explanatory variables.

See Appendix A (A.5.3) for detailed results.

[56] (% easier - % more difficult)

[57] Based on univariate and multiple regression models. The dependent variable (accessimpact_sum) has been calculated as the sum of the scores for individual modes, where 1 = easier, 0 = no change / don't know, and -1 = more difficult.

14.5. Perceptions regarding the effectiveness of specific sustainable transport initiatives

Finally, town centre users and residents were asked about their perceptions of the various LSTF funded sustainable transport measures (*after* survey only).

Survey respondents were asked to what extent they agreed or disagreed with a number of statements regarding the various sustainable transport interventions. To keep the questionnaire to a manageable length, the interviewer randomly selected a sub-sample of statements to ask each respondent.

To help compare responses a net agreement score has been calculated, as follows: % agreeing - % disagreeing with statement. Scores have then been colour coded as follows:

> 60% (Very high / strong net agreement)	*40% – 60% (High / strong net agreement)*	*20% - 40% (Moderate net agreement)*	*0% - 20% (Low net agreement)*	*< 0% (Net disagreement)*

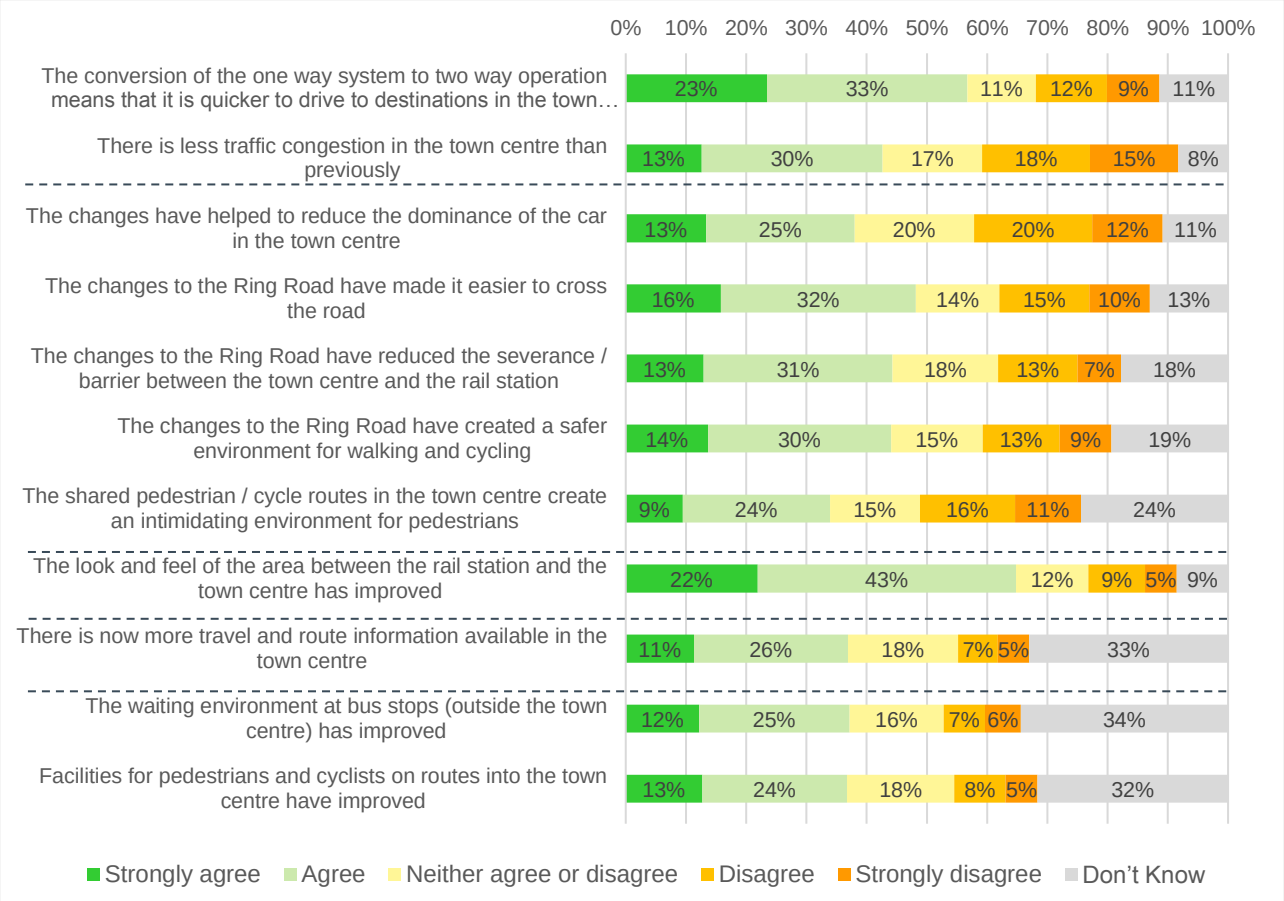
In addition, the two most common responses have been highlighted in bold in Table 34.

14.5.1. Overall findings

In general, the responses provided by town centre users and residents were **more positive than negative toward the changes**, suggesting that the various transport schemes and initiatives are achieving some results in terms of changing attitudes and perceptions.

However, net levels of agreement (% agree - % disagree) are generally moderate or low (<40% net agreement), particularly when compared with those for Telford, indicating **a range of views**.

Figure 41. To what extent do you agree or disagree with the following statements regarding the transport changes in Redhill town centre and surrounding area (Town Centre Users)



a. Sample size for all town centre users varies from 296 to 427 across the various statements.

Table 34. To what extent do you agree or disagree with the following statements regarding the transport changes in Redhill town centre and the surrounding area?

	All Town Centre Users							*Residents – Net Agreement Score*[c]
	Strongly agree	Agree	Neither agree nor disagree	Dis-agree	Strongly disagree	Don't Know	**Net Agree-ment**	
Operation of the road networks								
The conversion of the one way system to two way operation means that it is quicker to drive to destinations in the town centre	**23%**	**33%**	11%	12%	9%	11%	**36%** (mod)	*37% (mod)*
There is less traffic congestion in the town centre than previously	13%	**30%**	17%	**18%**	15%	8%	**10%** (low)	*5% (low)*
Walking and cycling environment								
The changes have helped to reduce the dominance of the car in the town centre	13%	**25%**	**20%**	**20%**	12%	11%	**7%** (low)	*-10% (net disagree-ment)*
The changes to the Ring Road have made it easier to cross the road	**16%**	**32%**	14%	15%	10%	13%	**23%** (mod)	*26% (mod)*
The changes to the Ring Road have reduced the severance / barrier between the town centre and the rail station	13%	**31%**	**18%**	13%	7%	18%	**24%** (mod)	*21% (mod)*
The changes to the Ring Road have created a safer environment for walking and cycling	14%	**30%**	15%	13%	9%	**19%**	**23%** (mod)	*8% (low)*
The shared pedestrian / cycle routes in the town centre create an intimidating environment for pedestrians ***(Negatively framed)***	9%	**24%**	15%	16%	11%	**24%**	**7%** (low)	*-17% (net disagree-ment)*
Public realm								
The look and feel of the area between the rail station and the town centre has improved	**22%**	**43%**	12%	9%	5%	9%	**50%** (strong)	*48% (strong)*
Information								
There is now more travel and route information available in the town centre	11%	**26%**	18%	7%	5%	**33%**	**25%** (mod)	*31% (mod)*
Corridor initiatives								
The waiting environment at bus stops (outside the town centre) has improved	12%	**25%**	16%	7%	6%	**34%**	**24%** (mod)	*15% (low)*
Facilities for pedestrians and cyclists on routes into/out of the town centre have improved	13%	**24%**	18%	8%	5%	**32%**	**23% (mod)**	*40% (strong)*

a. Sample size for all town centre users varies from 296 to 427 across the various statements.
b. Sample size for Residents varies from 200 to 228 across the various statements.

14.5.2. Perceptions about operation of the ring road

The majority of respondents (town centre users 56%, residents 52%) agree that the two-way operation of the Ring Road means that it is **quicker to drive to destinations** in the town centre.

Stakeholders viewed the change positively and noted that vehicles from the west no longer have to travel around the one-way system in order to access the Belfry car park.

However, **views are mixed on whether there is less congestion in the town centre** than previously, resulting in low net agreement (town centre users +10%, residents +5%).

Both groups of focus group participants perceived levels of congestion in the town centre to be increasing. This is thought to be connected with construction works at a number of development sites in the town centre and elsewhere in the town centre (unrelated to the LSTF / Balanced Network schemes), narrowing of the carriageway on the ring road, new / additional pedestrian crossings, and changes to the traffic light phasing.

14.5.3. Perceptions about quality of the walking and cycling environment

There is generally moderate net agreement that the changes to the ring road have made it easier to cross the road, created a safer environment for walking and cycling, and reduced the severance / barrier between the town centre and the rail station – ***creating a better environment for walking and cycling from the perspective of approximately half of town centre users and a third of residents.***

However, views are mixed on whether the changes have helped reduce the dominance of the car in the town centre (town centre users +7%, residents -10%); and whether the shared pedestrian / cycle routes in the town centre create an intimidating environment for pedestrians (town centre users +7%, residents -17%). These factors ***may be continuing to act as a barrier to more walking and cycling*** for some respondents, particularly some residents who may already have a generally negative view of Redhill town centre.

Focus group participants who were existing cyclists were complementary about the new facilities and perceived them to have created a safer environment:

> *"Outside Sainsbury's and Iceland they've put in a cycle lane that was never there before. It's made it easier to get into town whereas before it was quite busy with people walking all over the place and with the cars".*

However, as described above, participants revealed a lack of awareness about the shared nature of the paths, with some viewing them as exclusively for pedestrians and others perceiving some sections to be dedicated cycle lanes. From a safety perspective, greater delineation of the pedestrian / cycle path was widely supported as a means of advertising the shared use nature of the path:

> *"I didn't realise it was a cycle path, it doesn't look like one, you expect a different type of paving".*

Further concerns about pedestrian safety were raised about the location of some of the crossings, the removal of guard railing particularly outside the train station, and the introduction of two-way flow requiring pedestrians to check for traffic in both directions. Some of the crossings have been re-positioned and are no longer felt to be on typical desire lines, encouraging pedestrians to cross elsewhere away from the crossing facilities (e.g. diagonally between the rail station and the bus station)[58].

Construction work associated with the LSTF / Balanced Network schemes, and more recently, the redevelopment of Sainsburys (on-going at the time of the questionnaire surveys), was identified as having created a challenging environment for pedestrians and cyclists in recent years[59].

One stakeholder representing cyclists and pedestrians noted that narrowing the main carriageway creates a more challenging environment for confident cyclists who wish to continue cycling on the road, or pushes

[58] A petition asking for the re-instatement of the guard railing outside the station was taken to the Local Committee. The Stage 3 Road Safety Audit was reviewed and it was decided not to reinstate the guard railing. However, the sensors on the traffic lights have been modified to detect when pedestrians are crossing diagonally and trigger a red light for vehicles to allow pedestrians to cross safely. (Reigate & Banstead Council)

[59] Pedestrian and cycle access from the north is expected to improve once the redevelopment of Sainbury's has been completed. (Reigate & Banstead Council)

them onto the shared path where they travel at speeds inappropriate to a shared use environment. One Council representative thought that confident cyclists would continue to cycle on the road as the shared use path provides a less direct route; but felt that the shared use path would benefit less confident cyclists and those riding with children.

14.5.4. Perceptions about quality of the public realm

There is strong agreement regarding the **public realm benefits**, principally in relation to the look and feel of the area between the station and the town centre, with 65% of town centre users and 67% of residents agreeing that the changes have improved the area. This statement achieved the highest level of support.

Focus group participants were similarly supportive, and viewed the changes as a first step towards improving the look and feel of the town centre. Some of the group felt that the choice of a grey palette of materials created a clean, modern, but somewhat cold feel; and were concerned that planting to soften the environment would not be maintained and kept litter-free.

Participants also raised concerns that the new areas of seating on Station Road East were becoming a focal point for younger people (in the absence of alternative facilities), creating an intimidating environment for those accessing / egressing the town centre.

None of the participants felt that the changes had helped integrate the train station with the town centre; but Council representatives stressed that a fundamental shift will only occur once the full station redevelopment has been completed.

14.5.5. Perceptions about information

Just over a third of respondents agreed that there is now **more travel and route information available** in the town centre, resulting in moderate net agreement; although a relatively high proportion (town centre users 33%, residents 44%) did not know.

Focus group participants praised the real time information screen provided at the bus station.

The online journey planning website was also praised:

> *"They've got a really good website where they have real time information. They have a real time map and you click on the stop and it tells you when the next bus is due"*

However, not everyone was aware of the website and some participants preferred hard copies of maps and timetables. Participants were shown copies of the TravelSMART walking and cycling paper maps. These were viewed positively, but none of the participants had seen them before.

While only half of the participants were aware of the wayfinding totems in the town centre, all perceived them to provide valuable information for visitors.

14.5.6. Perceptions about corridor impacts

Views were mixed regarding the corridor impacts, and there was a high proportion of don't know responses. However, there was net agreement that:

- the waiting environment at bus stops outside the town centre has improved (town centre users +24%, residents +15%); and
- facilities for pedestrians and cyclists on routes into/out of the town centre have improved (town centre users +23%, residents +40%);

- ***creating a better environment for sustainable access to the town centre for approximately a third of town centre users and half of residents***.

As highlighted above, focus group participants felt that cycling routes into the town centre remained limited (including in the Northern Corridor where LSTF corridor investment has been focused). The proposed London Road shared pedestrian and cycle path was identified as a key missing piece in the jigsaw. This was originally intended to be implemented as part of the LSTF package, but was postponed.

"I think it depends on the direction really. I'm at the top end of the town [Northern Corridor] and I don't think there are many cycle lanes. There are a couple of alleyways from the park where I live, but apart from that most of the cycle is generally town centre focused"

14.5.7. Differences between market groups (town centre users vs. residents)

Residents were less likely to agree with the various statements than those interviewed in the town centre, suggesting that they are generally less positive towards the changes or less likely to have recognised any benefits. However, the net agreement scores are generally within 10% for the two samples, with notable exceptions relating to:

- dominance of the car in the town centre;
- the 'shared pedestrian / cycle routes in the town centre; and
- the safety of the environment for walking and cycling.

As in Telford, residents were less convinced that the changes had reduced the dominance of traffic in the town centre, and were less likely to feel (or have noticed) that the changes had created a safer environment for walking or cycling (but were also less concerned about the new shared pedestrian walking / cycling routes creating an intimidating environment for pedestrians). These factors may continue to be a barrier for some in terms of frequency of trips and use of sustainable modes.

A substantially higher proportion of residents agreed that 'facilities for pedestrians and cyclists on routes into the town centre have improved', but this is likely to be a reflection of the low levels of exposure to these initiatives amongst town centre users living outside Redhill.

Note – the results for residents are based on a much smaller sample than those for town centre users.

Regression analysis

Regression analysis[60] undertaken using the town centre user survey data shows only an age related difference in how town centre users perceive the recent investment in sustainable transport measures *(statements_sum)*. Younger participants had more positive perceptions than older participants.

See Appendix A (A.5.4) for detailed results.

14.5.8. Corridor comparison

There were no significant differences in the responses given by town centre visitors living within the Northern Corridor, and those living elsewhere in Redhill.

[60] Based on univariate and multiple regression models. The dependent variable (statements_sum) is has been calculated as the sum of the scores for individual statements, where -2 represents strongly disagree and +2 represents strongly agree. See Appendix A for detailed results.

14.6. Summary

General perceptions regarding access to the town centre by sustainable modes

- Town centre users and residents were first asked about their general perceptions regarding access to the town centre by sustainable modes. No specific reference was made to any of the LSTF measures at this stage.

- Respondents had mixed views regarding town centre accessibility prior to the recent investment, but generally viewed access by walk more favourably than by bus or cycle. Perceptions were substantially higher amongst those familiar with these modes. However, a substantial number of respondents felt that they had insufficient knowledge to comment, particular regarding cycling (almost half of town centre users stated 'don't know).

- As for Telford, comparison of before and after results shows an increase in 'don't know' responses across all modes and both surveys (up to 48% for cycling). The reason for this is unclear, but does influence the interpretation of the results. It also suggests that lack of awareness or understanding is likely to act as a barrier to the future use of sustainable modes in Redhill.

- **Access to bus** - Overall, there is no evidence to suggest that town centre users or residents perceive there to have been a general improvement in access by bus, either across the whole town or in particular corridors. Survey results show either no material change in perceptions between the two survey periods, or, a decrease in 'easy' responses which is matched by a similar increase in 'don't know' responses. Lack of public transport information, or lack of awareness of the information available, was identified by focus group participants as a key barrier to greater bus use.

- **Access to foot** - The survey evidence suggests that there has been a **positive shift in people's perceptions of the general quality of the walking environment** into the town centre. Access by walk was already perceived to be easier than by bus or cycle, and the improvement was primarily amongst those who already felt that access was 'fairly easy'. The impact on actual behaviour change may therefore be limited. Focus group participants felt that while pedestrian facilities have generally been improved within the town centre, more investment is needed across the rest of Redhill.

  Corridor analysis shows no significant differences in perceptions amongst those living in the two corridors analysed, based on sample sizes of between 130 and 202. The results **do not therefore support the hypothesis that LSTF investment in the Northern Corridor has improved perceptions of walking to the town centre more than elsewhere**.

- **Access to cycle** –Overall, there is no evidence to suggest that town centre users or residents perceive there to have been a general improvement in access to the town centre by cycle, with perceptions remaining low or worsening in the *after* period. A substantial proportion of town centre users and residents stated 'don't know' in the follow-up survey indicating a general lack of awareness or consideration of cycling as an option, which in itself is a significant barrier to increased levels of cycling. Focus group participants felt that while additional cycling facilities have been provided within the town centre (and viewed favourably by existing cyclists), cycling routes into the town centre are limited (including in the Northern Corridor where LSTF corridor investment has been focused), and this continues to represent a barrier to increased cycling.

  Corridor analysis **does not support the hypothesis that LSTF investment in the Northern Corridor has improved perceptions of cycle access to the town centre**. The proportion of town centre users describing access as 'very difficult' increased by +17% in the Northern Corridor compared with +6% in the Other Corridors', although the sample sizes are small (varying from 73 to 112 by corridor) and these changes are not statistically significant.

Experience using different modes

- Respondents who had walked to the town centre in the 12 months prior to the *before* and / or *after* survey were asked to rate a number of walking-related attributes.

- The results show improvements in the rating scores for 'quality of environment within the town centre' and 'quality of routes on approaches to town centre'[61], both key elements of the LSTF / Balanced Network package. Residents also reported an improvement in 'signage'. The LSTF package included seven wayfinding totems in the town centre, and at least 20 fingerposts and signs for cyclists on key routes into the town centre.

- The ratings scores for 'risk of accident' show an improvement amongst town centre users (but not statistically significant), but a decline amongst residents. The LSTF package included the introduction of wider footways and new crossing facilities on the ring road. However, focus group participants felt that removal of guard railing had created a safety risk by enabling some pedestrians to cross junctions diagonally, away from the formal crossing.

Awareness of recent sustainable transport schemes / initiatives

- The majority of interviewees in the town centre (at least 60%) were partly or fully aware of the main physical changes in the town centre, comprising:

  - conversion of the Inner Ring Road from one-way to two-way (86%);
  - provision of a continuous shared pedestrian / cycleway around the town centre ring road (62%);
  - pedestrianisation of Station Road East (opposite the station) (78%); and
  - public space improvements at Cromwell Road / Marketfield Road junction (69%).

  However, focus group participants revealed a lack of awareness about the shared nature of the paths, with some viewing them as exclusively for pedestrians and others perceiving some sections to be dedicated cycle lanes.

- Town centre users were much less aware of interventions on routes into the town centre, which affect a smaller proportion of town centre users and are less visible to car users who account for around half of visitors. This includes the new walking and cycling routes to the north of the town centre (42% aware); and bus stop improvements on routes into the town centre (45% aware).

- Awareness was even lower regarding the various information and awareness initiatives (< 35% in each of these cases), including those relating to the TravelSmart campaign. This suggests that the level of publicity and the scale of the initiatives has not been sufficient to reach the majority of town centre users (most of whom live in Redhill).

Impact of LSTF investment on perceptions of access to the town centre

- As highlighted above, comparison of before and after results regarding general perceptions of access to the town centre by sustainable modes shows a positive shift for walking, but not for bus and cycle. Respondents were then asked specifically, "what impact have the recent transport schemes in Redhill had on access to the town centre by the following modes?".

- At least four-fifths of town centre users and residents stated 'no change' or 'don't know', and did not perceive the recent transport schemes in Redhill to have had an impact on access to the town centre by walk, cycle, bus, and train. However, a net proportion of respondents felt that access by each mode had got 'easier' (% easier - % more difficult), as a result of the recent investment, particularly by:

  - car (town centre users +15%, residents +20%);
  - walk (town centre users +17%, residents +16%); and
  - cycle (town centre users 0%, residents +17%).

  Although the question was intended to capture the whole journey, these results may be influenced by positive perceptions regarding the changes within the town centre itself.

Perceptions regarding the effectiveness of specific sustainable transport initiatives

- When asked about specific sustainable transport interventions, the responses provided by town centre users and residents were generally more positive than negative, suggesting that the various transport

[61] But not statistically significant amongst town centre users.

schemes and initiatives are achieving some results in terms of changing attitudes and perceptions. However, net levels of agreement (% agree - % disagree) are generally moderate or low (<40% net agreement), particularly when compared with those for Telford, indicating a range of views.

- **Operation of the ring road** – There was moderate net agreement that the two way-operation of the ring road means that it is quicker to drive to destinations in the town centre, but mixed views and low net agreement that there is less congestion in the town centre. Focus group participants identified narrowing of the carriageway, new / additional pedestrian crossings and traffic light phasing, and disruption associated with construction works at a number of development sites in the town centre and elsewhere, as contributing to increased congestion (see Section 12.3.3).

- **Quality of the walking and cycling environment** – There was generally moderate net agreement that the changes to the ring road have made it easier to cross the road, created a safer environment for walking and cycling, and reduced the severance / barrier between the town centre and the rail station – creating a better environment for walking and cycling from the perspective of approximately half of town centre users and a third of residents.

  However, views are mixed on whether the changes have helped reduce the dominance of the car in the town centre (town centre users +7%, residents -10%); and whether the shared pedestrian / cycle routes in the town centre create an intimidating environment for pedestrians (town centre users +7%, residents -17%). Focus group participants were concerned about pedestrian safety due to the location of some of the crossings, the removal of guard railing particularly outside the train station, and the introduction of two-way flow requiring pedestrians to check for traffic in both directions.

- **Public realm** – There was strong agreement regarding the public realm benefits, principally in relation to the look and feel of the area between the station and the town centre, with 65% of town centre users and 67% of residents agreeing that the changes have improved the area. This statement achieved the highest level of support, but less than corresponding statements for Telford.

- **Information** – Just over a third of respondents agreed that there is now more travel and route information available in the town centre, resulting in moderate net agreement; although a relatively high proportion did not know. Focus group participants praised the real time information screen provided at the bus station, and the online journey planning website, but some participants preferred hard copies of maps and timetables.

- **Corridor interventions** – Views were mixed regarding the corridor impacts, and there was a high proportion of don't know responses. However, there was net agreement that:

  - the waiting environment at bus stops outside the town centre has improved (low / moderate net agreement); and
  - facilities for pedestrians and cyclists on routes into/out of the town centre have improved (moderate / strong net agreement);

  - creating a better environment for sustainable access to the town centre for approximately a third of town centre users and half of residents.

  Focus group participants identified the proposed London Road shared pedestrian and cycle path as a key missing piece in the cycle network. This was originally intended to be implemented as part of the LSTF package, but was postponed.

- Overall, residents were less likely to agree with the various statements that those interviewed in the town centre, suggesting that they are generally less positive towards the changes or less likely to have recognised the benefits – and therefore less likely to change mode.

- There were no significant differences in the responses given by town centre visitors living within the Northern Corridor, and those living elsewhere in Redhill.

15. Impact – Transport Behaviour

15.1. Introduction

This chapter examines the impact that the sustainable travel investment has had on use of sustainable modes, covering:

- Modes used prior to recent investment in sustainable transport measures.
- Change in modes used to travel to the town centre, based on comparison of before and after survey responses and self-reported change in intensity of use.
- Reasons for change in use of modes and the role of sustainable travel investment.
- Levels of walking and cycling within the town centre and on key investment corridors.

It also looks at the relationship between mode used and length of time visitors stay in the town centre.

The primary evidence sources are the town centre user survey and the residents survey; with evidence from the focus groups and stakeholder interviews used to add depth and context to the survey results. Pedestrian and cycle count data is used to examine levels of walking and cycling within the town centre and on key investment corridors.

For the town centre users, survey results are based on comparison of responses from two separate samples of respondents with different sample characteristics (see Chapter 13.3), which may influence the observed level of change. Confidence intervals (based on 95% probability) have been calculated to determine whether differences in the before and after samples represent a statistically significant difference in the wider population. Statistically significant differences are marked with an asterix (*) or ‘sig’.

For the residents survey, before and after responses are based on the same sample of residents. Any changes reported between the before and after surveys therefore represent a real change across the sample of respondents interviewed, weighted to be representative of the wider population[62]. Nevertheless, the panel of respondents do represent a sample of the population, and confidence intervals are still useful to understand how the overall response proportions compare to the true population. Confidence intervals (based on 95% probability) have therefore been calculated to determine whether real differences in the before and after samples are sufficiently large to indicate a significant change in the wider population. Statistically significant differences are marked with an asterix (*) or ‘sig’. See Section 2.3.1 for further information.

The survey questions focus on travel into the town centre. However, a number of the LSTF / Balanced Network Scheme measures are focused in the town centre, so will only influence part of respondents’ trips. Levels of walking and cycling within the town centre, and on key investment corridors are considered in Section 15.6.

Town centre users have been abbreviated to ‘tcu’ and residents to ‘res’ in some locations, in order to present the results in a clear and succinct manner.

[62] Note, however, the before and after surveys were undertaken at different points of time, and the robustness of the results relies on resondents answering in a consistent and accurate manner.

15.2. Modes used prior to recent investment in sustainable transport measures (daytime)

Results from town centre users and residents show that, prior to LSTF and associated interventions, car was the dominant mode (used by 58% of town centre users and 72% of residents in the previous 12 months). Car use was higher amongst residents who are less likely to be regular visitors to the town centre.

Bus (used by 37% of town centre users and 21% of residents) and walk (34% of town centre users and 47% of residents) also account for a considerable amount of usage, with a very low percentage for cycling (4% of town centre users and 5% of residents).

Table 35. Modes used prior to recent investment in sustainable transport measures (before survey)

	Modes used in previous 12 months		Mode used on survey day	Main mode used
	Town centre users	Residents	Town centre users	Residents
Car	58%	72%	46%	58%
Bus	37%	21%	18%	1%
Walk	34%	47%	26%	27%
Cycle	4%	5%	2%	1%
Other	13%	2%	12%	13%
Total	100%	100%	100%	100%
Base	659	313	659	313

15.3. Comparison of mode use in before and after surveys (day)

A comparison of before and after results for 'modes used in previous 12 months' provides an indication of change in mode use pre and post LSTF implementation.

For the town centre users, change in mode use is based on comparison of responses from two separate samples of respondents with different sample characteristics (see Section 13.3), which may influence the observed level of change.

For residents, the responses are provided by the same set of respondents, so any changes reported (between the *before* and *after* surveys) represent a real change in behaviour, weighted to be representative of the wider population. However, the questions were asked at different points of time, and the robustness of the results relies on respondents answering in a consistent and accurate manner.

Town centre users

Comparison of before and after samples shows:

- the main mode remained as car, followed by bus and walk;
- a significant increase in car use (*58% before, 65% after*);
- a significant increase in train use (*13% before, 18% after*);
- a significant increase in walking (34% *before*, 40% *after*), with similar increases in walking amongst those living within 3kms (+3%) and 5kms (+5%) but not found to be statistically significant for the associated sample sizes[63];
- no significant change in use of bus and cycling.

No modes showed a significant fall in usage, suggesting that visitors are now using a wider range of modes.

The **significant increase in car use** is primarily focused on those living further than 5kms away. This is likely to be a combination of increased car use amongst existing and new visitors. As shown in Section 13.3, Redhill is now attracting new visitors (locals and those from further afield) who see the town centre as a more attractive destination than previously. There is no significant difference between the two samples in terms of the proportion travelling more than 5kms, however, there are now more people visiting on a more infrequent basis who may be less familiar with the environment and transport options available, and more likely to travel by car.

The **only significant change for those living within 3kms (the target LSTF market) is an 8% increase in rail use (primarily focused in the Northern Corridor, where the increase is 10%)**. Merstham Station (to the north) and Reigate Station (to the west) are both easily accessible to those living within 3kms. Rail use has been promoted through the LSTF marketing and information initiatives and improvements to the public realm between Redhill Station and the town centre, however, it is not possible to determine from this survey data the role of these measures in influencing the observed change.

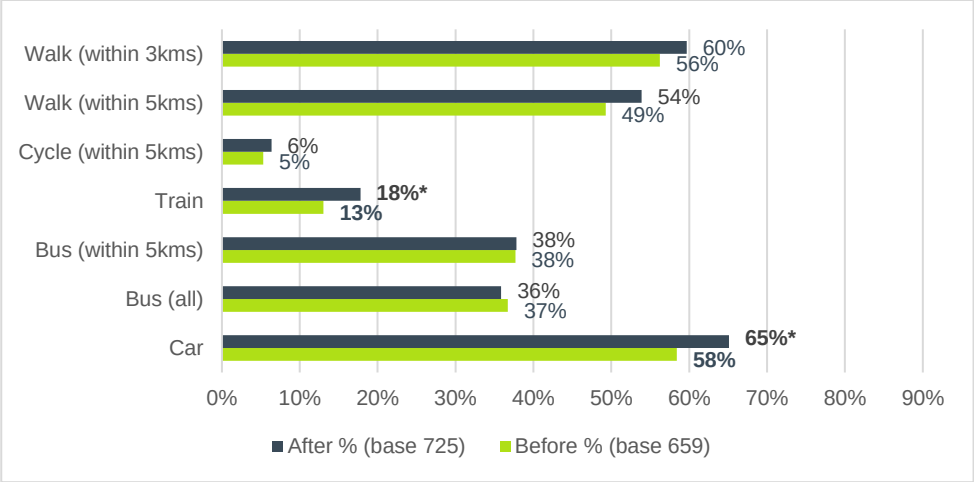
There has been **no significant increase in bus use amongst those living within Redhill, despite bus route improvements across Redhill** – with some evidence of a decrease in the south and west corridors (-9%, *sig.*), compared with no significant change in the Northern Corridor.

The reported increase in walking amongst those living within Redhill was not sufficient to be statistically significant, and **does not therefore provide sufficient evidence to support the hypothesis that use of walking and cycling has increased amongst those living within 3kms**. Furthermore, corridor analysis suggests that the potential increase is confined to the south and west corridor, away from the main LSTF investment areas, although the corridor changes are not statistically significant for the associated sample sizes.

[63] Surprisingly, the biggest increase in the % walking occurs amongst those living beyond 5kms. These respondents are expected to have walked to the town centre from another destination in Redhill (e.g. office) rather than home.

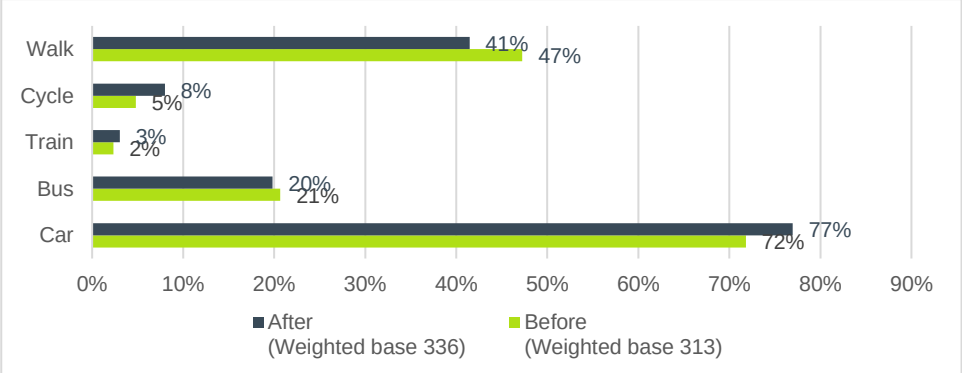
Figure 42. All modes used to travel into the town centre in the last 12 months

a) Town centre users (unweighted) - No time of day specified



Significant differences in before and after results marked with asterix (*). Other modes not shown here, but no signif. differences found.

b) Residents (weighted) – Daytime only



During the before survey, 23 respondents who visited less than once a month or answered 'don't know' were excluded from the transport questions. This approach was changed for the after survey, and the question was asked to all respondents. Significant differences between before and after results (with respect to the wider population) marked with asterix (*).

Regression analysis[64] – Across the whole sample (including those living local and further afield), the results show a significant increase in walking and cycling combined (DV_1) (37% before, 43% after[65]). As indicated above, further analysis showed that the increase was only significant in areas other than the Northern Corridor. However, once socio-demographic and behavioural characteristics had been controlled for using regression analysis, the before and after LSTF intervention effect was no longer significant, suggesting that the increase was likely to be due to socio-demographic (age, mobility impairment) and behavioural (distance, frequency of visits, dwell time, journey purpose) differences between the two samples. **There is therefore no robust evidence from the analysis undertaken to suggest that the observed increase in walking and cycling combined is due to the LSTF intervention**.

Regression analysis also shows no significant difference in the use of sustainable modes in general (walking, cycling, bus, and train combined) *(DV_2)*, and this is also the case in both the Northern and Other Corridors. This is also the case after accounting for socio-demographic or behavioural differences. Hence, there is no robust evidence to suggest that socio-demographic or behavioural differences between the baseline and after groups have masked any potential LSTF intervention impact.

See Appendix A (A.5.1 and A.5.2) for detailed regression results.

[64] Dependent variables are DV_1 (0 = have not walked or cycled in the last year; 1 = have walked or cycled in the last year) and DV_2 (0 = have not walked or cycled or used bus or train in the last year; 1 = have walked or cycled or used bus or train in the last year).
[65] Surprisingly, the biggest change in the % walking occurs amongst those living beyond 5kms. These respondents are expected to have walked to the town centre from another destination in Telford (e.g. office) rather than home.

Residents panel

Cross tabulation of residents' main mode *before* and *after* (representing a real change within the retained sample of respondents) shows that the majority of residents (83%) have not changed their mode.
A small number of respondents shifted between car and sustainable modes (12%), with a net shift away from sustainable modes, towards car, van or motorcycle (3%, +9 residents), supporting the above findings.

There was also a small shift within sustainable modes (8 respondents whose previous main mode was walking, now state their main mode is cycling).

Although only 4 residents described cycling as their main mode in the before survey, this number rose to 11 in the after survey, representing a small increase in cycling.

Figure 43. Socio-demographic and behavioural predictors of sustainable mode use in Redhill

The regression results show that a number of socio-demographic and behavioural characteristics are associated with sustainable mode use for travel to Redhill town centre.

- Participants who lived further away, made less frequent visits to the town centre, spent more time in the town centre, and were older and/or mobility impaired were less likely to have walked or cycled in the past year (in either the before or after period).
- Less frequent visitors, those who travelled with one other person (vs. alone), women, non-white participants, and those who had access to a car or van were less likely to have used any sustainable mode in the past year (in either the before or after period).

See Appendix A (A.5.2) for detailed regression results.

15.4. Self-reported change in use of specific modes (daytime)

The above findings relate to the range of modes used in the 12 months prior to the before and after surveys; but do not take account of any changes in frequency or intensity with which different modes were used (including main and secondary choices). Survey respondents were therefore asked *'Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre'*. No specific reference was made to any of the recent sustainable travel measures at this stage.

Respondents were only asked about modes they had used in the last 12 months. However, the results below are presented both as a percentage of all respondents (to give an indication of the overall mode shift) and as a percentage of existing mode users.

The results are based on self-reported change amongst one set of respondents, rather than a comparison of two datasets from different points in time and (in the case of the town centre users) from different samples of respondents.

15.4.1. Amongst all respondents

The table below shows that the majority of respondents reported 'no noticeable change' or 'don't know / don't remember / don't use' (also treated as 'no noticeable change'):

- car (75% tcu, 74% res), bus (81% tcu, 90% res), walk (81% tcu, 80% res); and
- virtually all for train (90% tcu, 100% res) and cycle (97% tcu, 94% res).

The remaining respondents reported small net increases (% more - % less) in the use of each of the modes, particularly walk (town centre users +15%, residents +8%).

Table 36. Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre? (After results, all respondents)

Town centre users (unweighted) - No time of day specified

CAPI – On Street	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	15% (9%, 6%)	14% (7%, 7%)	8% (5%, 3%)	2% (1%, 1%)	18% (13%, 5%)
Less (A little less / A lot less)	12% (5%, 7%)	6% (2%, 4%)	3% (2%, 2%)	1% (0%, 1%)	3% (2%, 1%)
No noticeable change	36%	16%	6%	2%	20%
Don't use / Not applicable[2]	39%	65%	84%	95%	61%
Base[1]	**717**	**717**	**717**	**717**	**717**
Net increase (%more - % less)	**+3%**	**+7%**	**+4%**	**+1%**	**+15%**

1. First time visitors were not asked this question.

Residents panel (weighted) – Daytime only

CATI – Telephone	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	14% (2%, 12%)	5% (2%, 3%)	0% (0%, 0%)	5% (1%, 4%)	14% (4%, 11%)
Less (A little less / A lot less)	11% (8%, 3%)	5% (3%, 2%)	0% (0%, 0%)	1% (1%, 0%)	6% (4%, 2%)
No noticeable change	51%	9%	2%	2%	21%
Don't use / Not applicable[2]	23%	81%	98%	92%	59%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Base	**336**	**336**	**336**	**336**	**336**
Net increase (%more - % less)	**+3%**	**0%**	**0%**	**+4%**	**+8%**

2. Respondents who had not identified using the mode on day of survey or in the previous 12 months were not asked this question.

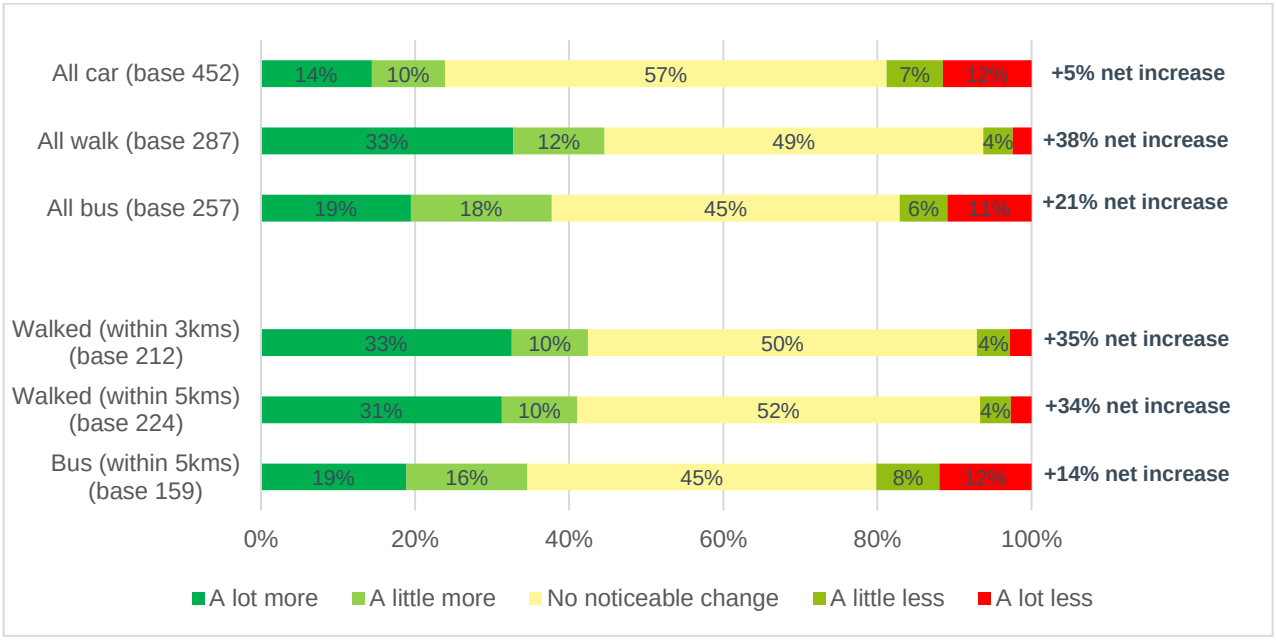
15.4.2. Amongst existing mode users

The same set of results are presented below, but are expressed as a percentage of specific mode users only, and are disaggregated by distance for bus and walk to best capture the potential impacts of the LSTF interventions.

As above there is a general trend towards a net increase in use of each of the modes, which may be a result of visitors using a greater range of modes, and/or a general increase in frequency of trips being made by the individuals concerned. *Note, a net proportion of town centre users (+19%) reported that they now visiting the town centre more frequently than a couple of years ago (with those travelling from outside Redhill most likely to be visiting more), but a net proportion of residents (+4%) reported a decrease in frequency of visits.*

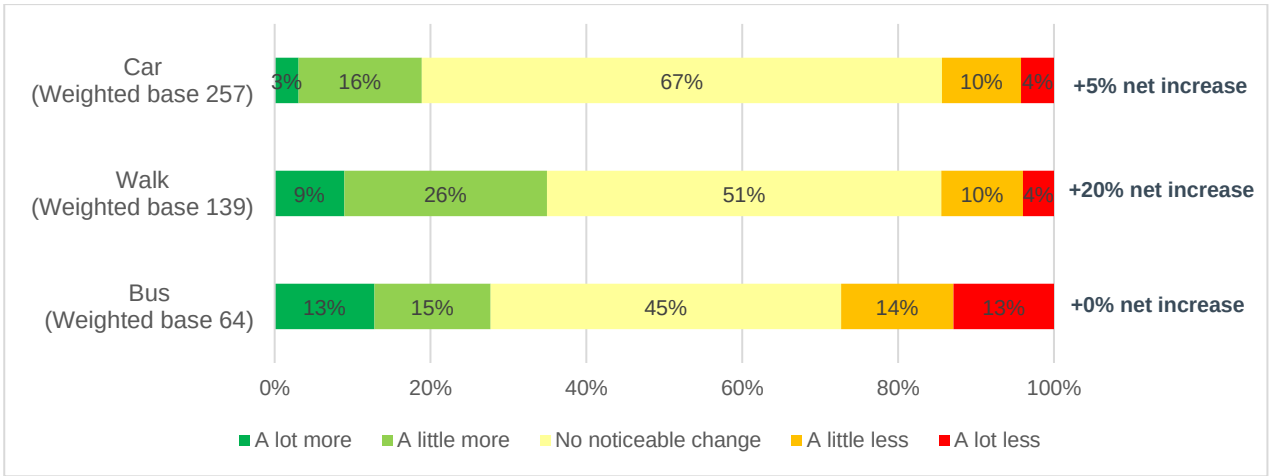
Figure 44. Compared with a couple of years ago, do you use the following means of travel more or less, for trips into the town centre? (After results, mode users only)

Town centre users (unweighted)



Sample size for cycle too small to provide meaningful results.

Residents panel (weighted)



Sample size for train and cycle too small to provide meaningful results.
Note – most residents live within 3kms of the town centre.

The largest net increase in mode use was for walking (town centre users +38%, residents +20%).

Smaller net increases were also reported for:

- train (town centre users +26%)
- bus (town centre users +21%, but 0% amongst residents); and
- car (town centre users +5%, residents +5%).

Comparison with before results – Corresponding results from the *before* survey demonstrate a more stable trend prior to the LSTF investment, with significantly more town centre users reporting 'no noticeable change' in mode use and smaller net increases in use of bus, train and walk than in the post investment period (with the exception of residents who reported a more positive trend in bus use prior to the LSTF investment).

These results suggest that the trend towards increasing levels of walking amongst existing walkers has continued to grow post LSTF investment, as has the positive trend in train use, and the positive trend in bus use amongst town centre users; but amongst residents, the growth in bus use has stabilised and has not been maintained by the LSTF investment.

Table 37. Change in frequency of mode use compared with a year ago – Before and after comparison

	Town centre users						Residents			
	Bus		Train		Walk		Bus		Walk	
	Before	After	Before	After	Before	After	Before	After	Before	After
A lot more	**9%**	**19%***	**12%**	**27%***	**17%**	**33%***	19%	13%	5%	9%
A little more	13%	18%	10%	19%	12%	12%	13%	15%	15%	26%
No noticeable change	**65%**	**45%***	**58%**	**35%***	**63%**	**49%***	58%	45%	74%	51%
A little less	9%	6%	12%	9%	4%	4%	7%	14%	6%	10%
A lot less	**4%**	**11%***	8%	11%	3%	2%	3%	13%	1%	4%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Base	**242**	**257**	**84**	**123**	**226**	**287**	**64**	**64**	**144**	**139**
Net increase (%more - % less)	**+9%**	**+21%***	**+1%**	**+26%***	**+23%**	**+38%***	**+22%**	**0%**	**+13%**	**+20%**

Car not covered in before questionnaire

Significant differences in before and after results for town centre users marked with asterix (*)

15.5. Reasons for change in use of modes and the role of sustainable travel investment

15.5.1. Specific reasons for change in use of modes

Survey respondents who reported that they were walking or cycling more were asked why they were using these modes more, and asked to select from a range of options.

Reasons for walking more

The sample sizes are small, but give an indication of the possible drivers:

- Of the 128 town centre users providing a main reason for walking more:
  - 44% said “It’s better for my health and fitness”.

- Of the 49 residents providing a main reason for walking more:
  - 44% said “It’s better for my health and fitness”
  - 52% said it was due to other factors, not covered in the options provided to them.

The main driver appears to be concerns about health and fitness. This was one of the themes of the TravelSmart campaign, but is also likely to be a reflection of wider trends and messages within society in general.

Other reasons relating to the LSTF investment were identified as a factor by a smaller but notable number of respondents:

- 26% of town centre users (but only 5% of residents) felt that ‘changes in the town centre have made walking more attractive’, and
- 13% of town centre users (but only 2% of residents) felt that ‘new routes and crossing facilities on the way into the town centre have made this mode more attractive’,

However,

- only 4% of town centre users and 7% of residents said that they were walking more because they were now more aware of the options.

Reasons for cycling more

The sample sizes for cycling were too small to draw any robust conclusions, but there was some acknowledgement from town centre users and residents that facilities for cyclists on routes into the town centre had improved.

15.5.2. Impact of LSTF investment on change in use of modes

All *after* respondents were then asked 'As a result of the recent transport schemes in Redhill, to what extent do you use the following modes of travel more or less, for trips into the town centre'.

The responses are presented below, firstly as a percentage of all respondents, and secondly as a percentage of existing users of the mode concerned only.

Amongst all respondents

Table 38. As a result of the recent transport schemes in Redhill, to what extent do you use the following modes of travel more or less, for trips into the town centre?

Town centre users (unweighted)

	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	16% (8%, 8%)	10% (5%, 5%)	6% (2%, 3%)	4% (2%, 2%)	21% (12%, 9%)
No noticeable change	54%	39%	32%	22%	42%
Less (A little less / A lot less)	7% (4%, 3%)	5% (2%, 3%)	7% (3%, 4%)	3% (1%, 2%)	2% (2%, 0%)
Don't know / Don't remember	1%	3%	2%	4%	1%
Don't use	21%	43%	53%	68%	34%
Total	100%	100%	100%	100%	100%
Base[1]	719	719	719	719	719
Net increase (%more - % less)	**+9%**	**+5%**	**-1%**	**+2%**	**+18%**

1. Six first time visitors were not asked this question.

Residents panel (weighted)

	Car	Bus	Train	Cycle	Walk
More (A lot more / A little more)	14% (2%, 12%)	7% (3%, 4%)	3% (1%, 1%)	7% (1%, 6%)	20% (5%, 15%)
No noticeable change	58%	18%	13%	17%	41%
Less (A little less / A lot less)	13% (10%, 3%)	9% (7%, 2%)	8% (6%, 2%)	4% (2%, 2%)	8% (6%, 2%)
Don't know / Don't remember	0%	1%	1%	1%	1%
Don't use	15%	65%	75%	72%	31%
Total	**100%**	**100%**	**100%**	**100%**	**100%**
Base	**336**	**336**	**336**	**336**	**336**
Net increase (%more - % less)	**+1%**	**-2%**	**-5%**	**+3%**	**+12%**

Amongst existing mode users

The following results have been filtered for the respondnets who actually used the mode in question for travel to the town centre in the previous 12 months – to provide compatibility with the results presented in Figure 44 (See Section 15.4.2).

Table 39. As a result of the recent transport schemes in Redhill, to what extent do you use the following means of travel more or less, for trips into the town centre? Filtered by respondents who reported using the mode in question)

Town centre users (unweighted)

CAPI – On-street	Car	Bus	Train	Walk
More (A lot more / A little more)	22% (11%, 11%)	25% (12%, 13%)	21% (11%, 11%)	35% (23%, 12%)
Less (A little less / A lot less)	7% (4%, 4%)	8% (5%, 3%)	8% (3%, 5%)	2% (2%, 0%)
No noticeable change	68%	63%	63%	62%
Don't know	2%	5%	8%	1%
Total	100%	100%	100%	100%
Base	452	257	123	287
Net increase (%more - % less)	**+15%**	**+17%**	**+13%**	**+33%**
Corresponding net increase from previous question (without reference to recent transport schemes)	**+5%**	**+21%**	**+26%**	**+38%**

Residents panel (weighted)

CATI – Telephone	Car	Bus	Train	Walk
More (A lot more / A little more)	18% (3%,15%)	27% (14%,13%)	-	34% (11%, 23%)
Less (A little less / A lot less)	13% (11%, 3%)	19% (13%, 6%)	-	7% (5%, 3%)
No noticeable change	67%	49%	-	57%
Don't know	2%	5%	-	1%
Total	100%	100%	-	100%
Base	259	67	-	139
Net increase (%more - % less)	**+5%**	**+8%**	**-**	**+27%**
Corresponding net increase from previous question (without reference to recent transport schemes)	**+5%**	**+0%**	**-**	**+20%**

For most modes, the reported change is similar or exceeds the net increases reported above:

- car (+15% tcu, +5% res), bus (+17% tcu, +8% res), train (+13% tcu, -), walk (+33% tcu, +27% res).

As for Telford, the results highlight some inconsistencies in the responses given to this and the previous question:

- Some respondents stated that they had not used a particular mode in the last 12 months, but then responded that they had used the mode more frequently as a result of the recent transport schemes - *This suggests an inconsistency in reporting of change of mode use, or that the respondents previously used the mode in question, but more than 12 months ago.*

- Others provided inconsistent responses between the two sets of questions about using specific modes more or less frequently – *This is illustrated by the two net increases reported by town centre users for*

car use, which show a higher proportion walking more as a result of the recent transport changes (+9%), than the proportion walking more overall (+3%), which is the opposite way round to a logical outcome.

Nevertheless, the results do suggest that the recent transport changes are a factor behind the increased frequency of use of: car (both user groups); bus (mainly amongst town centre users); train (amongst town centre users); and particularly walking (amongst both groups).

Focus group participants generally felt that the recent changes in Redhill have had limited impact on encouraging people to walk and cycle into the town centre. The dominance of the car and the rural nature of much of the surrounding area was felt to present a significant challenge for greater encouragement of walking and cycling. Lack of public transport information, or lack of awareness of the information available, was identified as a key barrier to greater bus use.

One Council officer reported that efforts to encourage greater use of sustainable modes in Merstham, through community engagement activities, had proved particularly challenging. The area is one of the most deprived in Surrey. Complementary initiatives to equip residents with the skills necessary to enter the workforce were felt to have priority over sustainable travel interventions in terms of residents' hierarchy of need; and car ownership is still an aspiration for many residents. Nevertheless, the LSTF initiatives may have started to change views and perceptions.

In general, stakeholders felt that mode shift would take time and additional investment, but the LSTF / Balanced Network programme has started the process.

Corridor differences (counterfactual analysis)

Comparison of results for those interviewed in different corridors within Redhill show similar net increases in use of bus (+9% Northern Corridor, +13% Other Corridors), and walk (+29% Northern Corridor, +28% Other Corridors), but much larger increases (statistically significant) in use of car in the Northern Corridor (+22%) compared with Other Corridors (+2%). This is contrary to expectations, given the additional LSTF investment in the Northern Corridor. Sample sizes for other modes were too small to report.

15.5.4. Impact of awareness and perceptions of LSTF investment on use of sustainable modes

Regression analysis using town centre user data (after survey only) has been undertaken to examine awareness and perceptions of LSTF measures on use of sustainable modes. Three potential independent variables were considered:

- Awareness of individual sustainable transport initiatives *(awareness_sum)* (Section 14.3).
- Impact of sustainable travel investment on access to the town centre in general (easier, no change / don't know, more difficult; *accessimpact_sum*) (Section 14.4).
- Perceptions regarding the effectiveness of sustainable transport initiatives *(statements_sum)* (Section 14.5).

These variables were modelled against three indicators of mode use: use of walking and cycling in the past year (*DV_1,* Section 15.3), use of sustainable modes in the past year (*DV_2,* Section 15.3), and self-reported change in use of sustainable modes as a result of recent transport investment (*DV_3,* Section 15.5.2).

- *Awareness of the LSTF schemes* – This was a significant univariate predictor of having walked or cycled in the past year *(DV_1)*, having used any sustainable mode *(DV_2)*, and reporting an increase in frequency of sustainable mode use as a result of the recent transport schemes *(DV_3)*. **Those who were aware of the LSTF schemes were more likely to have used sustainable modes as a result of the transport schemes than those who were unaware, and to have reported using sustainable modes more often since the recent transport investment.**

- *Perceived impact of LSTF interventions on town centre access (easier, no change or more difficult)* – This was also a significant univariate predictor of having walked or cycled *(DV_1)*, having used any sustainable mode *(DV_2)*, and reporting a change in frequency of sustainable mode use *(DV_3)*. **Participants who perceived a more positive impact were more likely to have used sustainable modes than those who perceived access to have got more difficult, and to have reported using sustainable modes more often as a result of the recent transport investment.**

- *Perceptions regarding effectiveness of LSTF measures* – This was not a significant univariate predictor of having walked or cycled *(DV_1)* or having used any sustainable mode in the last year *(DV_2)*. However, **respondents who perceived the recent transport changes** *(DV_3)* **more positively were more likely to have reported using sustainable modes more often as a result of the recent transport investment.**

In addition, general perceptions of ease of walking and cycling *(easy_walkcycle_sum)* was a strong significant predictor of walking or cycling. Those who perceived walking and cycling to be easier were more likely to have walked or cycled in the past year (in either the before or after period). Similarly, those who believed it was easier to use any of the sustainable modes *(easy_walkcyclebus_sum)* were more likely to have used any of these modes in the past year (in either the before or after period).

See Section A.5.3 for further information.

15.6. Levels of walking and cycling within the town centre and on key investment corridors

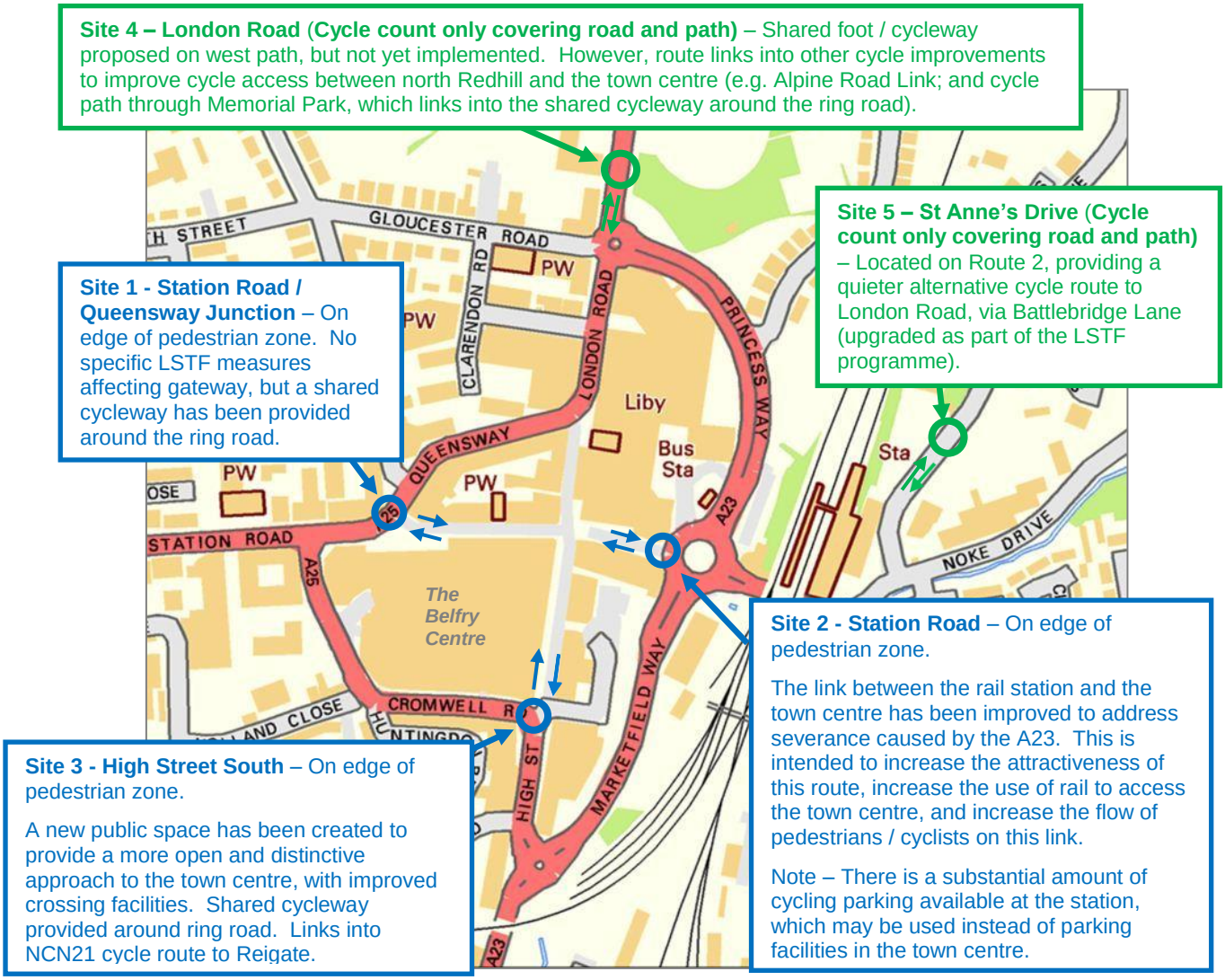
15.6.1. Primary data collection approach

Pedestrian and cycle video counts were undertaken at five sites in and around Redhill Town Centre (Figure 45) covering the following periods:

- between 10th and 17th May 2014 – prior to the commencement of most of the LSTF capital works in the town centre; and
- between the 19th and 26th September 2015 – six months after the completion of the majority of capital works in the town centre[66].

Both periods covered 5 weekdays and 2 Saturdays, with counts undertaken between 9am and 6pm to capture those visiting the town centre for retail, service or leisure purposes. The count sites were chosen to monitor those accessing town centre destinations on foot or cycle, using routes affected by LSTF measures. The specific locations were discussed and agreed with Surrey County Council LSTF team.

Figure 45. Pedestrian and cycle video counts in Redhill town centre



Contains Ordnance Survey data © Crown copyright and database right 2014

[66] The study timescales meant that it was not possible to wait until May 2016 for the after counts; so counts were undertaken in September instead. Automatic continuous count (ACC) data collected across Surrey shows that cycle flows in mid-September are typically similar (but marginally lower) than those in mid-May - but will be subject to yearly variation.

Three of the locations cover the main access routes into the town centre from the East, South and West. The sites were chosen to capture those arriving in the town centre on foot or cycle, on routes affected by LSTF measures. It was not possible to undertake counts on the northern approach, as work was already underway at the time of the before surveys, to create a shared pedestrian and cycle way around the ring road (part of the Balanced Network Scheme).

However, cycle counts were undertaken at two locations north of the town centre, where significant LSTF investment in walking and cycling routes were proposed:

- London Road, north of the Princess Way junction; and
- St Anne's Drive.

15.6.2. Pedestrian and cycle activity in the town centre (Sites 1-3)

Levels of pedestrian and cycle activity (into/out of the town centre)

- The vast majority of those entering the pedestrianised area of the town centre, in both survey periods, were pedestrians. Only 1% of those counted were cyclists (either pushing or on a bike). These results are consistent with the survey results which show very low levels of cycling.

- There was no significant change[67] in the number of pedestrians and cyclists entering the town centre via the three approach routes between 2014 and 2015 overall. However, there are significant differences when the data is disaggregated by mode and day of week:

  - There was no significant change in the overall pedestrian count; but a **significant increase in cycling, +20%, across all survey days**.

  - T**he overall flow increased by 13% (sig.) on Saturdays**, comprising a 12% increase in pedestrians (sig.) and a 68% increase in cyclists (sig.) - albeit against a low cycling base. This was accompanied by a small, but significant decrease in pedestrians on weekdays (-6%), and a small increase in cyclists (+3%, sig.), resulting in **no overall change on weekdays**.

- The most popular approach in both 2014 and 2015 was the **eastern approach** from Station Road Roundabout (where there has been significant investment in the public realm). This approach saw a **significant increase in usage between the two survey periods (+13% overall)**, particularly on Saturdays. Overall flows on the other two approaches declined over the same period.

- The **profile of pedestrian movements throughout the day was similar in both years.** On weekdays there are clear peaks between 12:00 and 14:00, presumably reflecting lunchtime visits to the town centre made by employees working in the vicinity, and between 17:00 and 18:00, coinciding with the end of the working day. A similar lunchtime peak occurs on Saturdays, but with a slower build up and decline before and after.

- The **profile of pedestrian counts by day of week was also similar in both years**, with fewer pedestrians counted in the town centre on Saturdays, compared with the average weekday. Slightly higher weekday pedestrian counts on Thursday and Friday may be due to the presence of the open air market in the High Street. This is held every Thursday, Friday and Saturday between 9am and 4 pm.

- The low numbers of cyclists means that it is difficult to draw robust conclusions about the profile of cycle movements throughout the day or by day of week.

Effectiveness of LSTF measures

- The above findings (no significant change in the overall pedestrian count; but a significant increase in cycling, +20%) are consistent with the wider trend observed within the Active People Survey (see Section 13.5.4). The Active People Survey reports a significant increase in cycling activity between 2014/15 and 2015/16; and no significant change in levels of walking. This suggests that the recent transport investment is only one of several factors contributing to the observed increase in cycling;

[67] Significance testing was undertaken using paired t-tests (two-tail) to examine differences by mode, day, time period, and count site.

alongside the legacy effect of the London 2012 Olympic Games[68], for example (substantial parts of the Olympic Road Race were held in Surrey, on nearby roads).

- There has been an increase in pedestrian / cycle flow into the town centre on Saturdays. The majority of the additional flow is via the eastern approach, where there has been significant investment in the public realm. The increase in use of the eastern approach may partly reflect an increase in use of train – the town centre survey *after* results show that 18% of visitors had used the train to travel into the town centre in the last 12 months, compared with 13% in the *before* survey. However, the counts suggest that the recent transport investment has made this approach a more attractive route to/from the town centre; and may have contributed to the increase in usage, particularly on Saturdays.

**Note – One day weekday manual cycle counts undertaken by SCC at 12 locations on the outside of the ring road, show a substantial decline in levels of cycling between June 2014 and September 2015, coinciding with the monitoring periods for the video counts. One day counts are subject to considerable fluctuation, and the September 2015 count looks unusually low when compared with previous counts, possibly due to the 'wet, dry' conditions on the day. Nevertheless, the overall dataset suggests that levels of cycling on the approaches to the ring road have not increased on weekdays following the recent transport investment. There was no change in use of station cycle parking between 2012 and 2015.[69]*

15.6.3. Pedestrian and cycle activity north of the town centre (Sites 4-5)

Levels of pedestrian and cycle activity

- Counts undertaken across the two sites to the north of the town centre (London Road and St Anne's Drive) show:
  - a **significant decrease in cycling at both locations on weekdays** (-21% at London Road and -31% at St Anne's Drive);
  - **a large significant increase on Saturdays at St Anne's Drive** (74%), but little change on London Road (not statistically significant);
  - **a significant reduction in cyclists across the two sites** (-12%); but, the change at each individual site is not significant.

- The **profile of cycle movements throughout the day is similar in both years**:

Effectiveness of LSTF measures

- The above results suggest that certain sectors of the population (i.e. weekend cyclists) are making use of the new cycle links via St Anne's Drive; however, this is not replicated amongst the weekday population. The London Road shared use cycle path has not yet been implemented, so a *large* increase at this site would not be expected.

[68] See 2014 Ped, Cycle Count Technical Note for evidence regarding the influence of London 2012.
[69] LSTF Outcomes Report (SCC, March 2016).

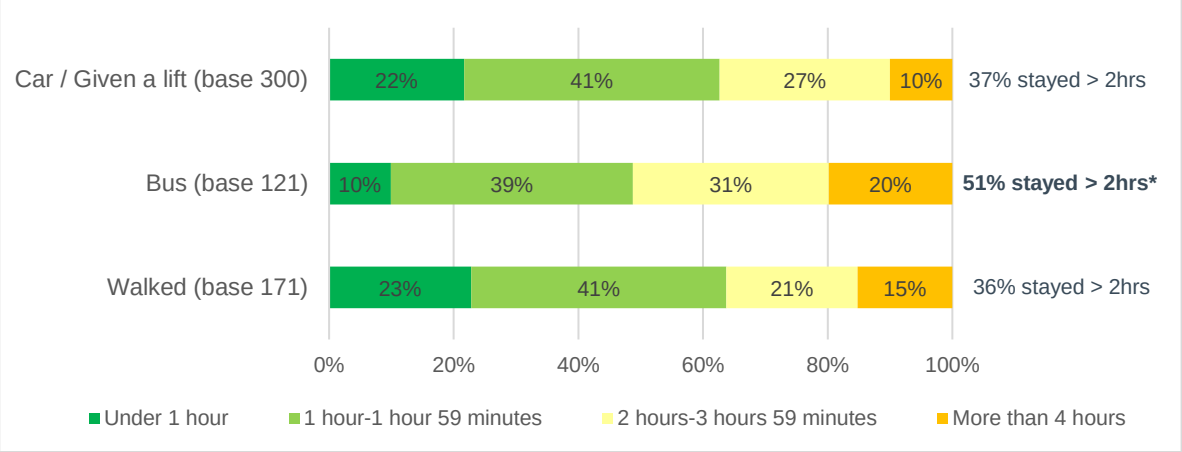
15.7. Relationship between mode used and length of stay

Figure 46 shows that in both the before and after periods, those that travelled by bus to the town centre stayed for a longer time than those that travelled by car.

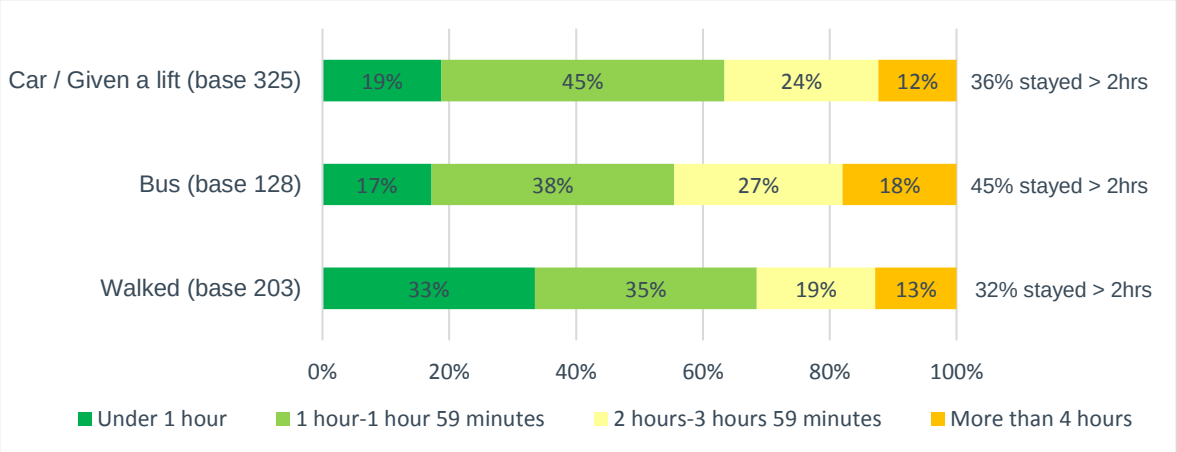
It is unclear from the data whether there is a causal relationship between mode used and length of stay, and how this relates to frequency of visit of total spend.

Figure 46. Relationship between mode used on day of survey and length of stay

Before - Town centre users



After - Town centre users



Significant differences between bus and car, and walk and car, marked with asterix (*).

15.8. Summary

Modes used prior to the recent investment in sustainable transport measures

- Results from the town centre user and residents' surveys show that, prior to the recent investment in sustainable transport measures, car was the dominant mode (used by 58% of town centre users and 72% of residents in the previous 12 months).

- Bus (used by 37% of town centre users and 21% of residents) and walk (used by 34% and 47% respectively) also account for a considerable amount of usage. However, levels of cycling were much lower, with 4% of town centre users and 5% of residents having cycled in the previous year, and only 1% of residents describing cycling as their main mode.

Change in modes used to travel to the town centre in the before and after surveys (daytime)

- Comparison of results for town centre users in the before and after samples shows:

  - a significant increase in car use (*58% before, 65% after*) – with the biggest increase amongst those living more than 5kms away;
  - a significant increase in train use (*13% before, 18% after*) – primarily amongst those living within Redhill (<3kms);
  - a significant increase in walking (34% *before*, 40% *after*), with similar increases in walking amongst those living within 3kms (+3%) and 5kms (+5%) but not found to be statistically significant for the associated sample sizes[70];
  - no significant change in use of bus and cycling.

  No modes show a significant fall in usage, suggesting that visitors are now using a wider range of modes.

- As shown in Chapter 13, Redhill is now attracting new visitors (locals and those from further afield) who see the town centre as a more attractive destination than previously. There is no significant difference between the two samples in terms of the proportion travelling more than 5kms, however, there are now more people visiting on a more infrequent basis who may be less familiar with the environment and transport options available, and more likely to travel by car.

- The only significant change for those living within 3kms (the target LSTF market) is an 8% increase in rail use - primarily focused in the Northern Corridor (served by two local stations) where the increase is 10% (*6% before, 16% after*). Rail use has been promoted through the LSTF marketing and information initiatives and improvements to the public realm between Redhill Station and the town centre, however, it is not possible to determine the role of these measures in influencing the observed change.

- Regression analysis shows that the observed increase in walking and cycling (combined) is largely due to socio-demographic and behavioural differences between the baseline and after sample, rather than any LSTF / Balanced Network intervention impact. Furthermore, corridor analysis suggests that the potential increase is confined to the south and west corridor, away from the main LSTF investment areas (although the corridor changes are not statistically significant for the associated sample sizes). **These results alone do not therefore provide sufficient evidence to support the hypothesis that use of walking and cycling has increased amongst those living within 3kms (the target LSTF market)**.

- Comparison of before and after responses from the residents survey, representing real change within a retained sample of respondents also shows an increase in car use; but a decline in the proportion walking within the previous year; and small changes in the use of bus, train and cycle. In terms of their most frequently used mode:

  - the majority of residents (83%) have not changed their mode;
  - a small number of respondents shifted between car and sustainable modes (12%), with a net shift away from sustainable modes, towards car, van or motorcycle (3%, +9 residents), supporting the above findings;

[70] Surprisingly, the biggest increase in the % walking occurs amongst those living beyond 5kms. These respondents are expected to have walked to the town centre from another destination in Redhill (e.g. office) rather than home.

Although only 4 residents described cycling as their main mode in the before survey, this number rose to 11 in the after survey, representing a small increase in cycling. In addition, the proportion reporting to have cycled in the last year increased from 5% to 8%.

Change in frequency / intensity of different modes for travel to the town centre (daytime)

- The above findings relate to the range of modes used in the 12 months prior to the before and after surveys; but do not take account of any changes in frequency or intensity with which different modes were used (including main and secondary choices). Survey respondents were therefore asked *'Compared to a couple of years ago, do you use the following means of transport more or less, for trips into the town centre'*. No specific reference was made to any of the recent sustainable travel measures at this stage. Respondents were only asked about modes they had used in the last 12 months.

- A substantial proportion of survey respondents reported 'no noticeable change' (the results for train use by residents, and cycling, are not reported here due to the very small sample sizes involved):

  - car (57% tcu, 67% res), bus (45% tcu, 45% res), train (35% tcu,-), and walk (49% tcu, 51% res)[71].

- The remaining respondents reported net increases[72] in the use of all sustainable modes:

  - particularly walk (+38% tcu[73], +20% res) but also bus (+21% tcu [74], 0% res) and train (+26% tcu, -) to varying degrees; and
  - in the use of car (+5% tcu, 5% res).

- Those using walk, bus and train (town centre users only) are now doing so more frequently than previously. Walking amongst town centre users has increased the most, with 45% reporting that they are now walking more frequently than previously. The extent to which this is because they are now making more trips, or because they have changed modes is unclear – but is likely to be due to a combination of these factors.

- Corresponding results from the before survey demonstrate a more stable trend prior to the LSTF investment. Significantly more town centre users reported 'no noticeable change' in use of bus, train and walking in the before survey: bus (65% before, 45% after*), train (58% before, 35% after*), and walk (63% before, 49% after*). Similar trends were also evident in the residents sample. Before respondents also reported smaller net increases in use of bus, train and walk (with the exception of residents who reported a more positive trend in bus use prior to the LSTF investment).
- The *after* results suggest that the trend towards increasing frequency of walking amongst <u>existing</u> walkers has continued to grow post LSTF investment, as has the positive trend in train use, and the positive trend in bus use amongst town centre users; but amongst residents, the growth in bus use has stabilised and has not been maintained by the LSTF investment.

Impact of LSTF investment on mode use

- The same respondents were then asked '*As a result of the recent transport schemes in Redhill*, *to what extent do you use the following modes of travel more or less, for trips into the town centre'*.

- For most modes, the reported change is similar or exceeds the net increases reported above:

  - car (+15% tcu, +5% res), bus (+17% tcu, +8% res), train (+13% tcu, -), walk (+33% tcu, +27% res).

- As for Telford, the results highlight some inconsistencies in the responses given to this and the previous question, with some respondents reporting high levels of use, as a result of the recent transport investment, than they reported overall.

[71] %s relate to town centre users and residents respectively.

[72] % more frequently - % less frequently.

[73] +35% for just town centre users living within 3kms; covering the same catchment area as the residents survey.

[74] +14% for just town centre users living within 5kms.

- Nevertheless, the results do suggest that the recent transport changes are a factor behind the increased frequency of use of: car (both user groups); bus (mainly amongst town centre users); train (amongst town centre users); and particularly walking (amongst both groups).

- A key driver behind increased use of walking appears to be concerns about health and fitness, identified as a factor by almost half of survey respondents who said they were walking more frequently. This was one of the themes of the TravelSmart campaign, but is also likely to be a reflection of wider trends and messages within society in general. Other reasons relating to the LSTF investment were identified as a factor by a smaller but notable number of respondents:

  - 26% of town centre users (but only 5% of residents) felt that 'changes in the town centre have made walking more attractive', and
  - 13% of town centre users (but only 2% of residents) felt that 'new routes and crossing facilities on the way into the town centre have made this mode more attractive', but,
  - only 4% of town centre users and 7% of residents said that they were walking more because they were now more aware of the options.

- Regression analysis shows that while the difference in mode use between the before and after sample was found to be due to socio-demographic and behavioural differences between the two samples rather than any LSTF / Balanced Network intervention impact, there is evidence of a link between the various measures and the intensity of use of sustainable modes (bus, walk, cycle).

  - Town centre users who were aware of the LSTF schemes were more likely to have reported using sustainable modes more often since the recent transport investment.
  - Those who perceived LSTF interventions to have had a positive impact on town centre access were more likely to have to have reported using sustainable modes more often as a result of the recent transport investment.
  - Those who perceived the recent transport changes to have been more effective in delivering the intended outcomes were more likely to have reported using sustainable modes more often as a result of the recent transport investment.

  In addition, general perceptions of ease of walking and cycling (easy_walkcycle_sum) was a strong significant predictor of walking or cycling. Those who perceived walking and cycling to be easier were more likely to have walked or cycled in the past year (in either the before or after period). Similarly, those who believed it was easier to use any of the sustainable modes (easy_walkcyclebus_sum) were more likely to have used any of these modes in the past year (in either the before or after period).

Levels of walking and cycling within the town centre and on key investment corridors

Pedestrian and cycle activity to / from the town centre

- Video counts undertaken at three key access points to the town centre show that the vast majority of those entering / exiting the pedestrianised area of the town centre, in both survey periods, were pedestrians. Only 1% of those counted were cyclists (either pushing or on a bike). These results are consistent with the survey results which show very low levels of cycling.

- There was no significant change[75] in the total number of pedestrians and cyclists entering the town centre via the three approach routes between 2014 and 2015 overall. However, there was a significant increase in cycling (+20%) across all survey days - albeit against a low cycling base. This is consistent with the wider trend observed within the Active People Survey (2014/15 and 2015/16), suggesting that the recent transport investment is only one of several factors contributing to the observed increase in cycling; alongside the legacy effect of the London 2012 Olympic Games, for example.

- There was also a significant increase in pedestrian / cycle flow into the town centre on Saturdays. The majority of the additional flow is via the eastern approach, where there has been significant investment in the public realm. The increase in use of the eastern approach may partly reflect an increase in use of train – the town centre survey after results show that 18% of visitors had used the train to travel into the town centre in the last 12 months, compared with 13% in the before survey. However, the counts

[75] Significance testing was undertaken using paired t-tests (two-tail) to examine differences by mode, day, time period, and count site.

suggest that the recent transport investment has made this approach a more attractive route to/from the town centre; and may have contributed to the increase in usage, particularly on Saturdays.

- The profile of pedestrian movements by day of week and time periods was similar in both years. The low numbers of cyclists means that it is difficult to draw robust conclusions about the profile of cycle movements throughout the day or by day of week.

Pedestrian and cycle activity north of the town centre

- Counts undertaken at two sites to the north of the town centre (London Road and St Anne's Drive) show:
  - a significant decrease in cycling at both locations on weekdays;
  - a large significant increase on Saturdays at St Anne's Drive, but little change on London Road (not statistically significant).

- The above results suggest that certain sectors of the population (i.e. weekend cyclists) are making use of the new cycle links via St Anne's Drive; however, this is not replicated amongst the weekday population. The London Road shared use cycle path has not yet been implemented, so a large increase at this site would not be expected.

16. Impact – Retail Economy

16.1. Introduction

This chapter examines what impacts sustainable travel investment has had on town centre activities and retail businesses. In particular, it covers:

- the impact that LSTF investment has had on the overall attractiveness of the town centre;
- the impact of the LSTF investment on changing the frequency with which people visit the town centre; and
- the perceptions of retailers and stakeholders regarding the impact of LSTF investment on the retail economy.

The primary evidence sources are the town centre user / residents survey and the retailer interviews; with evidence from the focus groups and stakeholders used to add depth and context.

16.2. Impact of LSTF investment on attractiveness of the town centre

16.2.1. Overall perceptions of recent improvements and developments

Survey respondents were asked about the role of various transport and non-transport changes in promoting Redhill as a destination.

Of the three changes included in the questionnaire, the Memorial Park is perceived to have had the most impact. However, it is also notable that transport and environment changes are perceived to have had a positive influence by about half of town centre users (49%), and 60% of residents.

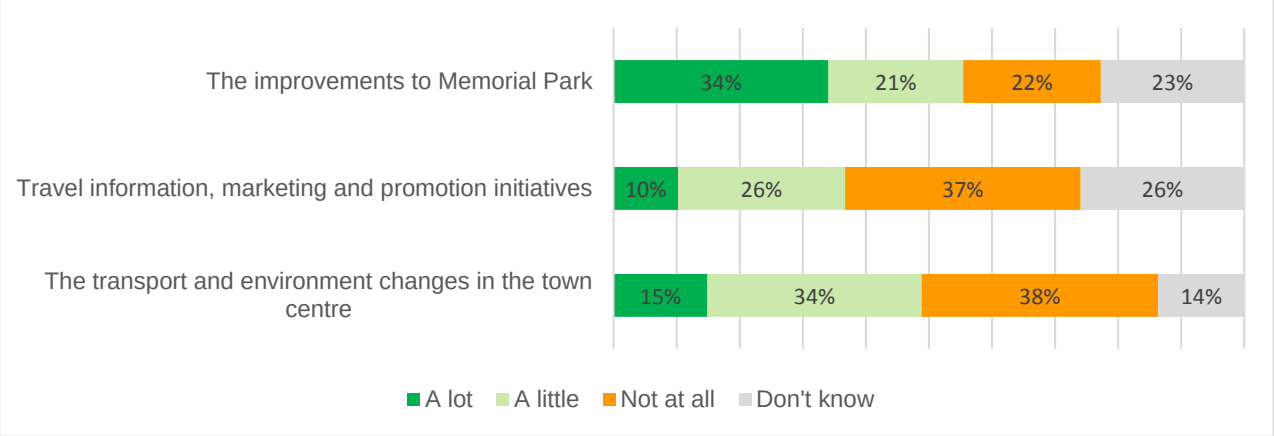
Smaller proportions felt that travel information, marketing and promotion initiatives had had a positive impact (37% of town centre users, 45% of residents) – *broadly similar in scale to the proportions who agreed that there is now more travel and route information available in the town centre.*

Table 40. To what extent do you think the following have helped to promote Redhill Town Centre as a destination?

	Town Centre Users [a]						*Residents – % Positive (A little or A lot)[b]*
	A lot	A little	Not at all	Don't know	Base (n)	% Positive (A little or A lot)	
The transport and environment changes in the town centre	15%	34%	38%	14%	725	49%	60%
Travel information, marketing and promotion initiatives	10%	26%	37%	26%	725	37%	45%
The improvements to Memorial Park	34%	21%	22%	23%	725	55%	78%

a. Sample size for all town centre users was 725 for each statement.
b. Sample size for Residents was 336 for each statement.

Figure 47. To what extent do you think the following have helped to promote Redhill Town Centre as a destination?



Focus group participants (Feb 2016) generally expressed negative or neutral views about whether Redhill had become a more attractive destination in recent years, referring to the poor retail, eating, and night time economy (which are still perceived to be declining); however, the perceptions of some participants were tempered by their awareness of the recent works within the town centre.

The full impact of the investment in promoting Redhill Town Centre, and attracting inward investment and new retail outlets (including more diverse and higher value retailers) will only emerge over time.

16.3. Impact of LSTF investment on frequency of visits

Chapter 13 shows that there is evidence from the town centre user survey that Redhill is now attracting new visitors, who see the town centre as a more attractive destination than previously[76]; but some contradictory evidence regarding change in frequency of visits amongst those living within Redhill. This is in contrast to a stagnant or declining trend in the years prior to the recent transport investment.

Reasons for visiting more frequently

The most frequently cited reason for visiting more frequently (other than 'change in circumstances') was:

- improvement in ease of travelling into the town centre (town centre users 25%, residents 6%)[77].

Other frequently cited reasons relate to the improvement in leisure facilities (residents 17%); and, improvement in type, quality, range or opening hours of shops and services (residents 14%).

These results suggest that **the recent transport investment has had a positive impact in encouraging more frequent visits amongst town centre users**; but not amongst the wider residential population. However, other factors influenced by the recent transport investment were selected by less than 10% of town centre users and residents. While the public realm benefits are perceived positively (see Chapter 14), they have only encouraged a small proportion of respondents to consider visiting more frequently[78].

Table 41. Reasons for visiting MORE frequently during the daytime than 12 months ago

	Town centre users	Residents
Retail and leisure offering		
Improvement in type, quality, range or opening hours of shops and services	10%	14%
Improvement in leisure facilities, e.g. restaurants, bars, cinemas, etc	4%	17%
More opportunities to combine shopping and leisure facilities	6%	2%
Improvement in the Town Park facilities and amenities	6%	5%
Factors influenced by LSTF investment		
Improvement in ease of travelling into the town centre	25%[1]	6%
Improvement in the look and feel of the outside space	8%	9%
Cheaper or more convenient parking	9%	2%
Improvement in safety and security	6%	0%
Other		
Now undertaking more shopping and leisure trips in general	4%	9%
Other competing centres have become less attractive to visit	1%	1%
Now less likely to use the internet for shopping	0%	1%
Change in circumstances e.g. change of job, moved house, etc.	50%	17%
Other	9%	41%
Base (unweighted for town centre, weighted for residents)	**226**	**67**

1. This corresponds to 34% in the Northern Corridor, compared with 17% in Other Corridors. However, the results are based on small sample sizes and this change is not statistically significant.

[76] Those who used to visit often before the recent transport changes works are continuing to do so, but there are now more people visiting on a more occasional basis – up to three times a month for those living within 3kms, and up to once a month for those living further afield.

[77] Identified as the MAIN reason by 19% of town centre users, and 6% of residents.

[78] Identified as the MAIN reason by 4% of town centre users, and 7% of residents.

Reasons for visiting less frequently

Chapter 13 shows that a notable proportion of residents (23%) are visiting less frequently than previously, as are a small proportion of town centre users (14%). In most cases, this is due to 'change in circumstances' or 'other' unrelated to the LSTF investment, or the quality of the retail / leisure offering.

The dominant reason for visiting less frequently, other than 'change in circumstances' or 'other' was:

- 'Deterioration in type, quality, range or opening hours of shops and services' (town centre users 27%), and 'now more likely to use the internet for shopping' (town centre users 15%);

and the following transport related reasons:

- Deterioration in ease of travelling into the town centre (town centre users 11%)[79].
- More expensive or difficult to park (residents 11%)[80].
- Deterioration in the look and feel or issues of the outside space (town centre users 10%, *but only 1% described this as the main reason*)[81].

Table 42. Reasons for visiting LESS frequently during the daytime than 12 months ago

	Town centre users	Residents
Retail and leisure offering		
Deterioration in type, quality, range or opening hours of shops and services	27%	6%
Deterioration in leisure facilities, e.g. restaurants, bars, cinemas, etc.	3%	4%
Factors influenced by LSTF investment		
Deterioration in ease of travelling into the town centre	12%	5%
Deterioration in the look and feel of the outside space	10%	1%
Issues of safety and security	4%	1%
More expensive or more difficult to park	9%	11%
Other		
Now undertaking fewer shopping and leisure trips in general	3%	3%
Other competing centres have become more attractive to visit	10%	3%
Now more likely to use the internet for shopping	15%	3%
Change in circumstances e.g. change of job, moved house, etc.	44%	30%
Other	13%	53%
Base (unweighted for town centre, weighted for residents)	**94**	**79**

The above results suggest that while 'change in ease of travelling into the town centre' has generally had a positive impact on frequency of visits amongst town centre users (mentioned by 25% as a factor, and 19% as the main reason), the changes have also had a negative impact on a small proportion (mentioned by 12% as a factor, and 9% as the main reason).

A small proportion (11% of residents) reported that they were visiting less frequently because they felt that parking had become more expensive or difficult. *The new two-way operation is thought (by stakeholders) to have improved access to town centre car parks; however, Marketfield Car Park has closed, traffic flow in the town centre was disrupted while the LSTF / Balanced Network Schemes were implemented, and there has been further disruption around the town associated with various development sites. Charges have not changed substantially during the research period.*

[79] Identified as the MAIN reason by 9% of town centre users, and 1% of residents.
[80] Identified as the MAIN reason by 4% of town centre users, and 9% of residents.
[81] Identified as the MAIN reason by 1% of town centre users, and 0% of residents.

16.4. Impact of LSTF investment on the town centre economy and retailer confidence

16.4.1. Retailer views

Interviews were undertaken with twenty retailers in the town centre (five within the Belfry) in November 2015 to capture perceptions regarding the impact of the LSTF investment on the town centre retail economy. The retailers interviewed represented predominantly small businesses, accounting for thirteen of the sample.

Views on current retail economy and retailer confidence, and driving factors

- Retailers gave mixed responses regarding the state of the retail economy. Nine described the economy as growing and eight felt that retailer confidence was improving[82]. Seven described the economy as declining and six did not feel retailer confidence had improved. They described a tough retail environment with a large number of vacant units, a large number of charity shops, and low footfall, with people choosing to go to bigger centres to shop instead.

- For those businesses describing retailer confidence as improving, the most common reasons cited related to the recent transport and public realm changes; along with the positive impact of development in the town centre (e.g. the redevelopment of Sainsbury's which started in Summer 2015) and across the rest of the town (e.g. new housing developments), and the growth in the national economy. Specific reference was made to:

  - less congestion, quicker access to the town by car and public transport; and
  - the role of the recent changes in updating the appearance and image of the town centre;

  "There is less traffic congestion and this has helped retail confidence in the town."

  "…the image has improved in Redhill. It now looks really updated. I think this helps all the businesses. Confidence is now here for people to open new business."

  "I feel the look and regeneration, along with new road access has helped the change. We had a one way system and at peak times there was heavy congestion. Now it is a lot quicker for people to access the town by car and I also think it helps public transport to be a lot quicker."

  "It's a good mix of road changes and new development, along with the UK economy boost that is affecting us. The new roads are making the town more accessible."

  "There are new housing developments, schools, and a better two-way road system. It is now easier to get in and out of town."

- Three of the six businesses who said retail confidence had worsened mentioned the negative impact of office firms moving out of Redhill and taking lunchtime / evening trade with them; and the disruption associated with the recent road works and other development activity which has driven some customers away. Some mentioned the role of nearby larger competing town centres and in particular fast travel to London.

  "It is very, very quiet. A lot of local shops have closed down. All the road works and demolishing causes delays in the traffic. As a result, a lot of people are still being put off coming into town."

  "They demolished all these offices and no new offices have, or will, come back soon."

  "A bit slower this year. A lot of people are put off coming here because traffic and transportation is absolutely dire."

[82] These were more likely to be comparison stores (four out of nine, compared with one out of seven describing the economy as declining).

It should be noted that, while the question posed to retailers did not make any reference to the recent transport changes, the introduction did refer to them. This may have influenced the focus of some responses.

Impact of recent transport changes on specific businesses

- The impact of the recent transport changes and investment in transport information on specific businesses was probed. However, not all businesses focused specifically on the impacts of the recent transport changes in their answers, and instead, some talked about the performance of their business generally.

- Five of the twenty businesses said that they had seen a positive impact on their business, with one specifically citing the two-way ring road as being beneficial in terms of connecting business to the town centre. Four businesses reported a negative impact, with one highlighting the adverse impact the roadworks had on staff getting to the town centre. The remaining eleven businesses said the recent changes had had no noticeable impact.

Impact of transport changes on attracting new businesses, or encouraging others to stay, expand or leave

- Four businesses believed that transport changes had attracted new business and encouraged existing business (with two retailers citing their own businesses as an example). A larger number of businesses, six, disagreed and thought that the transport changes (including the disruption during the works) had encouraged businesses to leave. The remaining ten businesses said they had not noticed any impact.

Impacts if recent transport changes had not been implemented

- Almost half the businesses (nine out of 20) said that it would have had a negative impact on the health of the town centre if the changes had not been made - the one way system and the poor quality of the public realm would have continued to have adversely impacted on the economy, and more shops would have closed down.

- Eight said they did not know and two that there would have been no difference. One said the impact would have been positive if the changes had not been made ("*Hard to say, but would have been slight improvement"*); but this increased to three when retailers focused on their won business. One of the three said this was because the town centre would have been busier, because the traffic in Redhill would have been a lot better. Although the respondent did not clearly articulate in what way traffic would have been better, their comment may have been referring to the disruption during the implementation of the LSTF / Balanced Network Scheme.

Unexpected impacts resulting from the transport changes

- When asked whether there had been any unexpected impacts resulting from the transport changes, either positive or negative there was a wide range of responses, with seven reporting positive impacts, five both positive and negative impacts and one just negative impacts.

- The main unexpected positives impacts (cited by four) related to the Memorial Park (only marginally related to the transport changes). A few mentioned the improved access into the town centre because of road layout changes. Two said access into and out of town was better and two highlighted how the two way road system improved travel.

- Some of the negatives related to the disruption from the building works (*"There was lots of disruption, concrete everywhere, bits got dug up again and again"*), congestion and lack of parking.

Future impacts of the transport changes

- There was generally a positive outlook from the business sample with respect to the expected impact of the recent transport changes on the future prosperity and health of the town centre. About half the responses were related to increased footfall, growth or prosperity.

Impacts on staff travel

- About half said there had been no change in how staff travel to work. Three said it had improved, with some citing improved driving time because of the road layout changes. However, four said travel by car was worse (congestion worse, new layout causing confusion. A few mentioned public transport getting worse (*"they have cut back on bus services and quite difficult for staff"*)

16.5. Contribution of recent transport investment to town centre development

None of the developments identified in the Redhill Area Action Plan (Sites A to E) were dependent on the delivery of the LSTF / Balanced Network Schemes. However, the investment has delivered the supporting infrastructure set out in the Plan as necessary to enable the proposed development, and will lessen future impacts on traffic levels and congestion.

Furthermore, the measures are perceived by Council representatives to have ***contributed*** to progress at Marketfield Way (Site A), Cromwell Road (Site B) and Warwick Quadrant North / Sainsburys (Site C). Without the transport changes, the development proposals would still have been in place, but may not have progressed to the same extent. The investment of Government funding in the town, along with visible changes on the ground, is felt to have sent a positive message to developers and provided reassurance to developers that Redhill is the right place to invest.

This in turn is expected to influence other potential investors considering locating or expanding retail, services and office-based businesses in Redhill. The willingness of Government and other key organisations (such as Sainsbury's, Waitrose, and Network Rail) to invest in Redhill is expected to make the decision easier for other businesses considering Redhill as a location for investment.

16.6. Summary

Attractiveness of town centre

- Survey respondents were asked about the role of various transport and non-transport changes in promoting Redhill as a destination. Of the three changes included in the questionnaire, the Memorial Park is perceived to have had the most impact. However, it is also notable that transport and environment changes are perceived to have had a positive influence by about half of town centre users (49%), and 60% of residents. Smaller proportions felt that travel information, marketing and promotion initiatives had had a positive impact (37% of town centre users, 45% of residents).

Impact of recent transport investment on frequency of visits

- The majority of survey respondents visiting more or less frequently cited 'change in circumstances' or 'miscellaneous other' factors as the reason for their change in behaviour; with positive / negative factors relating to the retail and leisure offering also being key drivers.

- For others, 'improvement in ease of travelling into the town centre' was a key driver (26% of town centre users, but only 5% of residents visiting more frequently), suggesting that **the recent transport investment has had a positive impact in terms of encouraging more frequent visits amongst town centre users**. However, a small proportion of town centre users (12%) identified this as a reason for visiting less frequently – potentially reflecting frustration with the traffic disruption during the LSTF works and other more recent development activity in the town centre.

- While the public realm benefits have generally been perceived positively (see Chapter 14), they have only encouraged a small proportion of respondents to consider visiting more frequently (town centre users 8%, residents 9%).

Impact of recent transport investment on local retail economy

- In general, retailers had mixed views regarding the state of the local retail economy. Amongst those businesses describing retailer confidence as improving (8 out of 20), the recent transport and public realm changes, the positive influence of development in the town centre (e.g. the redevelopment of Sainsbury's which started in Summer 2015) and across the rest of the town (e.g. new housing developments), and the growth in the national economy were all identified as important contributory factors.

- Almost half the businesses (9 out of 20) predicted a negative impact on the town centre economy if the changes had not been made - the one way system and the poor quality of the public realm would have continued to have adversely impacted on the economy, and more shops would have closed down.

- However, there was opposition from a few retailers, with four identifying the recent changes as having a negative impact on their business. This appears to largely relate to the perceived disruption to trade during the implementation of LSTF / Balanced Network Scheme, and further traffic disruption associated with the redevelopment of Sainsbury's.

Contribution of recent transport investment to town centre developments

- None of the developments identified in the Redhill Area Action Plan (Sites A to E) were dependent on the delivery of the LSTF / Balanced Network Schemes. However, the investment has delivered the supporting infrastructure set out in the Plan as necessary to enable the proposed development, and will lessen future impacts on traffic levels and congestion.

- Furthermore, the measures are perceived by Council representatives to have contributed to progress at Marketfield Way (Site A), Cromwell Road (Site B) and Warwick Quadrant North / Sainsburys (Site C). Without the transport changes, the development proposals would still have been in place, but may not have progressed to the same extent. The investment of Government funding in the town, along with visible changes on the ground, is felt to have sent a positive message to developers and provided reassurance to developers that Redhill is the right place to invest.

- This in turn is expected to influence other potential investors considering locating or expanding retail, services and office-based businesses in Redhill. The willingness of Government and other key organisations (such as Sainsbury's, Waitrose, and Network Rail) to invest in Redhill is expected to make the decision easier for other businesses considering Redhill as a location for investment.

Consequences of not delivering the LSTF package

Stakeholders were asked 'what would have been the consequences of not delivering the LSTF Package in terms of travel and use of the town centre?' The following responses were provided by Council officers and the Shopping Centre Manager:

- Congestion would have continued to grow and would have created further barriers to growth and investment in Redhill.

- Without the pedestrianisation of Station Road East and the improvements to the gateways, the perception of the town centre as a through route, rather than as a destination, would perpetuate and the town centre would have continued to stagnate.

- The town would have continued to have declined in the eyes of the public.

- Confidence among job seekers in the Merstham area would be lower as hundreds of people have benefitted from training offered as part of the community funding initiatives.

- The wider and longer term benefits of improving community cohesion would not have been realised in Merstham, and while an unforeseen outcome, this is felt to be one of the legacies of the LSTF programme.

- Community engagement (via Live Smart Centre, the Bikes Revived Hub, and Community Infrastructure Funds) has been very positive and played an important role in building a better Redhill. This wouldn't have occurred without the LSTF project.

Appendices

Appendix A. Regression Analysis

A.1. Background

This note (prepared by Accent) describes the regression analysis undertaken to examine:

- the impact of LSTF investment on use of sustainable modes; and
- the relationship between levels of awareness and perceptions of LSTF interventions, and use of sustainable modes.

The influence of the following variables was also examined:

- socio-demographics;
- behavioural characteristics (such as journey purpose, dwell time, frequency of visit, etc.);
- general perceptions about ease of mode use; and
- awareness and perceptions of LSTF measures.

Where appropriate, the relative contribution of the LSTF interventions on use of sustainable modes compared with other factors was estimated.

The analysis seeks to address the following research questions:

- ***Q1) Has the introduction of LSTF measures had a significant impact on use of sustainable modes for travel to the town centre? Has the impact been greater in the Northern Corridor, where there has been more investment in LSTF measures (Redhill only)?***

  *Null hypothesis: The introduction of LSTF measures has **not** increased the likelihood of travel to the town centre by (i) walking or cycling (ii) any sustainable mode.*

- ***Q2) Are positive perceptions about the LSTF interventions (and levels of awareness of LSTF interventions) associated with increased likelihood of travelling to the town centre by sustainable modes? Does this vary for Telford Shopping Centre and Southwater users (Telford only)?***

  *Null hypothesis: Awareness of LSTF interventions and positive perceptions about the measures are **not** associated increased the likelihood of travel to the town centre by i) walking or cycling (ii) any sustainable mode.*

- ***Q3) What other factors have an impact on (i) use of sustainable modes (ii) awareness and perceptions of LSTF measures?***

  Key factors identitied.

A.2. Method

The analysis used the “baseline” CAPI survey undertaken in March / April 2014 and the “after” survey, which took place in October 2015 with town centre users in each location. The “baseline” and “after” survey data files were combined into a single file containing:

- questions that were present in both survey waves;
- questions relating to awareness, perceptions and impact of LSTF interventions from the “after” survey.

A.2.1. Sustainable mode use (Dependent variable)

Table A1 shows the survey questions used to compute three variables for sustainable mode use:

- **DV_1**: Whether users walked or cycled in the last year
  (0 = have not walked/ cycled in the last year; 1 = have walked/ cycled in the last year)

- **DV_2**: Whether users walked, cycled, taken the bus or taken the train in the last year (i.e. used any sustainable mode)
  (0 = have not used any sustainable mode in the last year; 1 = have used a sust. mode in the last year)

- **DV_3**: Whether users walked, cycled, took the bus or train more or less frequently in the past year as a result of the transport schemes in Telford (sumscore* of self-reported change in use of all sustainable modes) **[Used for after-group subgroup analysis only]**

  **i.e. the sum of the individual item scores. If respondent A reported walking and cycling 'a lot more' (score = 2), and using the bus and train 'a little more' (score = 1), then the sumscore would be 6 (2+2+1+1).*

Table A1. Sustainable mode use (Dependent variables)

Survey measure	BASELINE	AFTER
How did you travel into the town centre today?	Q18	Q8
What other modes have you used to travel into the town centre in the last 12 months?	Q19	Q9
As a result of the recent transport schemes in Telford / Redhill, to what extent do you use the following modes of travel more or less, for trips into the town centre?	-	Q17
Analysis variable		
DV_1: [0 = have not walked or cycled in the last year; 1 = have walked or cycled in the last year]	Q18 & Q19	Q8 & Q9
DV_2: [0 = have not walked, cycled, used bus or used train in the last year; 1 = have walked, cycled, used bus or used train in the last year]	Q18 & Q19	Q8 & Q9
DV_3: sum score of self-reported change in use of all sustainable modes, as a result of the recent transport schemes in Telford (bus, train, cycle, walk) [2 = a lot more; 1 = a little more; 0 = no noticeable change/don't know/don't use; -1 = a little less; -2 = a lot less]	N/A	Q17

A.2.2. LSTF intervention (Independent variable)

The overall treatment effect was defined as a dummy variable for the "baseline" survey (0) and the "after" survey (1) (Table A2).

For Redhill, another dummy variable was created to identify those residing in the Northern corridor (1) and those in other areas (0). Combining the baseline-after dummy variable and the area dummy variable, it was possible to examine the intervention effect before and after the intervention and between areas.

Table A2. LSTF intervention effects (Independent variables)

Survey measure	BASELINE	AFTER
Interviewing point (Telford Shopping Centre; 1= Southwater)	NA	QEP
Corridor (Redhill North, Redhill South, Town Centre, Outside Redhill)	Corridor	Corridor
Analysis variable		
Survey: [0 = baseline survey; 1 = after survey]	0	1
Destination: [0= Telford Shopping Centre A/B/C/D; 1= Southwater Development] (Telford only)	NA	QEP
Corridor_d: [0 = not Redhill North; 1 = Redhill North]	Corridor_d	Corridor_d
Beforeafter_north: [0 = baseline survey & Redhill North; 1 = after survey & Redhill North]	Survey & Corridor_d	Survey & Corridor_d
Beforeafter_notnorth: [0 = baseline survey & not Redhill North; 1 = after survey & not Redhill North]	Survey & Corridor_d	Survey & Corridor_d

A.2.3. Socio-demographic variables and behavioural characteristics (Independent variables)

Table A3 lists the socio-demographic and behavioural questions in the surveys that were included in the analysis. Where the variable used in the analysis was different from the original survey question, the computation of the variable is described. A large proportion of cases had missing data on the income measure (39% for Telford, 50% for Redhill). For this reason, income was excluded from the analysis.

Table A3. Socio-demographics and behavioural characteristics (Independent variables)

Survey measure	BASELINE	AFTER
Socio-demographics		
Gender	Q46	Q28
Age (17-20; 20-29; 30-39; 40-49; 50-59; 60-69; 70+)	Q45	Q27
Working status	Q47	Q29
Access to car or van	Q49	Q31
Disability	Q52	Q34
Ethnicity	Q48	Q30
Behavioural characteristics		
Size of travel group	Q50	Q32
Distance travelled (0-3km, 3-5km, >5km)	Distance	Distance
Journey purpose	Q3	Q3
Dwell-time	Q7	Q4
Frequency of visits during daytime (very frequent [≥1 times per week], frequent [1-3 times per month], infrequent [<1 times per month])	Q2	Q2
Self-reported change in frequency	Q9	Q5
Analysis variable (if different from survey item)		
Workingstatus_d: [0= not full-time employed; 1 = full-time employed]	Q47	Q29
Ethnicity_d: [0 = white; 1 = non-white]	Q48	Q30
Mobility impaired: [0 = not mobility impaired; 1 = mobility impaired]	Q52	Q34

A.2.4. General perceptions on ease of mode use, and awareness and perceptions of LSTF interventions (Independent and dependent variables)

Table A4 outlines questions about general perceptions on ease of mode use, and awareness and perceptions of LSTF intervention in the surveys that were included in the analysis. Only perceptions of ease of walking, cycling and taking the bus were measured in both the “baseline” and the “after” survey. Sumscores (i.e. the sum of the individual item scores) were created to assess the impact of awareness of LSTF interventions, perceptions of LSTF interventions, and the perceived impact of LSTF interventions on access to the town centre.

Table A4. General perceptions of ease of mode use, and awareness and perceptions of LSTF interventions

Variable	BASELINE	AFTER
General perceptions on ease of mode use		
In general, how easy would you say it is to access the town centre by the following modes (walking, cycling, bus)	Q32	Q13 (Both)
Awareness and perceptions of LSTF interventions		
Are you aware of the following transport schemes / initiatives?	N/A	Q16 (Both)
To what extent do you agree or disagree with the following statements regarding the transport changes to **the Box Road in general**?	N/A	Q20 (Telford)
To what extent do you agree or disagree with the following statements regarding the transport changes to **Coach Central**?	N/A	Q21 (Telford)
To what extent do you agree or disagree with the following statements regarding **other** transport changes in the town?	N/A	Q22 (Telford)
To what extent do you agree or disagree with the following statements regarding the transport changes in Redhill town centre and the surrounding area?	N/A	Q20 (Redhill)
What impact have the recent transport schemes in Telford / Redhill had on access to the town centre, by the following modes?	N/A	Q23 (Telford) Q19 (Redhill)
Analysis variable (if different from survey measure)		
General perceptions on ease of mode use		
Easy_walkcycle_sum [2 = very easy; 1= fairly easy; 0 = neither easy or difficult/don't know; -1 = slightly difficult; -2 = very difficult]	Q32	Q13 (Both)
Easy_walkcyclebus_sum [2 = very easy; 1= fairly easy; 0 = neither easy or difficult/don't know; -1 = slightly difficult; -2 = very difficult]	Q32	Q13 (Both)
Awareness and perceptions of LSTF interventions		
Aware_sum [0 = not aware/don't know; 1 = partly aware; 2 = fully aware]	N/A	Q16 (Both)
Statements_general_sum* [2 = strongly agree; 1 = agree; 0 = neither agree nor disagree/don't know; -1 = disagree; -2 = strongly disagree] Negative items were reverse coded.	N/A	Q20 (Telford)
Statements_coachcentral_sum* [2 = strongly agree; 1 = agree; 0 = neither agree nor disagree/don't know; -1 = disagree; -2 = strongly disagree] Negative items were reverse coded.	N/A	Q21 (Telford)
Statements_other_sum* [2 = strongly agree; 1 = agree; 0 = neither agree nor disagree/don't know; -1 = disagree; -2 = strongly disagree] Negative items were reverse coded.	N/A	Q22 (Telford)
Statements_sum* [2 = strongly agree; 1 = agree; 0 = neither agree nor disagree/don't know; -1 = disagree; -2 = strongly disagree] Negative items were reverse coded.	N/A	Q20, Q21, Q22 combined (Telford)
Statements_sum* [2 = strongly agree; 1 = agree; 0 = neither agree nor disagree/don't know; -1 = disagree; -2 = strongly disagree] Negative items were reverse coded.	N/A	Q20 (Redhill)
Accessimpact_sum [1 = easier; 0 = no change/don't know; -1 = more difficult]	N/A	Q19 (Both)

** If respondent A strongly 'strongly agreed' with 3 of the statements regarding the transport changes in the town centre, and 'disagreed' with 1 statements, then the sumscore would be 5 ((3*2)+(1*-1)). Similar approaches were used for the aware_sum, accessimpact_sum, statements_coachcentral_sum and statements_other_sum variables.*

A.3. Analysis

Preliminary descriptive analyses were used to examine the distribution of the variables included in the analysis. The following models were tested with the first two sustainable mode use variables (DV_1, DV_2) as the dependent variable. For Telford, only data for Telford Shopping Centre visitors was used in the models, i.e. after data for Southwater visitors was excluded.

Univariate logistic regression models were used to test the associations between the DVs (DV_1, DV_2) and all the IVs. Statistically significant IVs for each of the two DVs were retained for next stage of analysis:

1) Univariate model with LSTF intervention as the model predictor.
2) Univariate models with a) socio-demographics; b) behavioural characteristics; c) general perceived ease of mode use as a model predictor.

Multivariate models were then used to identify independent socio-demographic and behavioural predictors of the two DVs. The aim was to remove univariate predictors whose association with the DV was related to that of other predictors:

3) Multivariate model with socio-demographics and behavioural characteristics as model predictors. Stepwise backward elimination was used to find a model of statistically significant multivariate predictors.

Model 3 was then combined with variables relating to general perceptions about ease of mode use and the LSTF intervention effect:

4) Model 3 combined with general perceptions about ease of mode use.
5) Models 3 combined with the LSTF intervention as a predictor.
6) Where the LSTF intervention was significant in Model 5, we also examined models 4 and 5 combined.

A subgroup analysis among users from the “after” group was then conducted to test for the effect of perceived impacts of LSTF investment on sustainable mode use (DV_1, DV_2 and DV_3); and for Telford only, potential differences between Telford Shopping Centre vs. the Southwater Development (destination):

7) Univariate models with variables representing a) awareness of LSTF schemes (awareness_sum); b) perceived impacts of LSTF investment on town centre access (accessimpact_sum); c) perceptions of LSTF interventions (statements_sum); as model predictors of sustainable mode use.

7a) Models 7 combined with a main effect of destination and interactions between Destination and a) awareness of LSTF schemes (awareness_sum); b) perceived impacts of LSTF investment on town centre access (accessimpact_sum); c) perceptions of LSTF interventions (statements_sum). *(Telford only)*

Finally, we tested for socio-demographic and behavioural differences in awareness and perceptions of LSTF interventions (as dependent variables), to identify who the interventions have reached:

8) Univariate models of socio-demographics and behavioural characteristics as predictors of a) awareness of the LSTF interventions; b) the perceived impact of LSTF interventions on town centre access; and c) perceptions of transport changes associated with the LSTF measures.
9) Multivariate model of socio-demographics and behavioural characteristics as predictors of a) awareness of the LSTF interventions; b) the perceived impact of LSTF interventions on town centre access; and c) perceptions of transport changes associated with the LSTF measures.

For the purposes of statistical reporting, odds ratios (OR), beta coefficients (B), 95% confidence intervals (95% CIs) and p-values are reported.

- ORs are a relative effect measure. Values above 1 are indicative of positive effects (i.e. greater likelihood compared with the reference category), whereas values between 0 and below 1 indicate a negative effect (i.e. lesser likelihood compared with the reference category).

- Beta coefficients show the estimated strength of the association with the DV for each unit increase in the IV. Values below 0 indicate that there is a negative association between the DV and the IV, whereas values above 0 are seen when there is a positive effect.

- The 95% CI is a measure of precision of the estimated effect and shows a range within which a population parameter should fall at the 95% probability level. Narrower confidence intervals are an indicator of a more precise estimate.

- The p-value represents the probability of the occurrence of the null hypothesis (i.e. no significant difference/effect). Throughout this report, we have used the conventional cut-off point at the 0.05 level, i.e. a probability of less than 5% of the null hypothesis being true.

A.4. Results (Telford)

A.4.1. Effect of implementing LSTF interventions on use of sustainable modes (Model 1) – *Telford Shopping Centre (TSC) respondents only*

The impact of implementing the LSTF interventions was first examined using univariate logistic regression models (Model 1; Tables A5-A6).

Overall, 13% of town centre users had walked or cycled in the previous 12 months at baseline compared with 9% in the after group. The decrease in walking and cycling between the baseline and the after group was **statistically significant** (p<.05).

Table A5. Intervention effects on walking or cycling (DV_1)

Model 1	Univariate regression models		
	OR	95% CI	p-value
Intervention, Overall (n=1438)			
Baseline	Ref.		
After	0.70	0.50 – 0.97	0.033

**p<.05, **p<.01, ***p<.001*

Half (50%) had walked, cycled, taken the bus or taken the train (i.e. “used any sustainable mode”) at baseline compared with 39% in the “after” group. This was a **statistically significant decrease** in any sustainable mode use (p<.001; Table A6).

Table A6. Intervention effects on walking, cycling, taking the bus or taking the train (DV_2)

Model 1	Univariate regression models		
	OR	95% CI	p-value
Intervention, Overall (n=1438)			
Baseline	Ref.		
After	0.66***	0.53 – 0.81	<0.001

**p<.05, **p<.01, ***p<.001*

A.4.2. Effect of socio-demographic variables, behavioural characteristics, and general perceptions of ease of mode use on sustainable mode use (Models 2-5) – *Telford Shopping Centre (TSC) respondents only*

Univariate models of socio-demographic and behavioural predictors of sustainable mode use were tested, with significant predictors retained for multivariate testing.

Walked or cycled in the past year (DV_1)

Table A7 shows the results of the final multivariate models of socio-demographics, behavioural characteristics and general perceptions of ease of mode use as predictors of walking or cycling (DV_1).

Table A7. Socio-demographics, behavioural characteristics and perceived ease of mode choice as predictors of walking or cycling (DV_1)

	Model 3 1) socio-demographics 2) behavioural factors (n=1239)		Model 4 1) socio-demo 2) behavioural factors 3) ease of mode use (n=1239)		Model 5 1) socio-demographics 2) behavioural factors 3) intervention effect (n=1239)	
	OR	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
Age	0.76***	0.68 – 0.85	0.85**	0.75 – 0.97	0.85*	0.75 – 0.97
Access to car or van						
None	Ref.		Ref.		Ref.	
One or more	0.34***	0.23 – 0.50	0.23***	0.15 – 0.36	0.23***	0.15 – 0.36
Distance						
0 – 3km	Ref.		Ref.		Ref.	
3 – 5km	0.27***	0.16 – 0.44	0.32***	0.19 – 0.54	0.31***	0.18 – 0.54
5 – 10km	0.11***	0.05 – 0.25	0.15***	0.06 – 0.34	0.15***	0.06 – 0.34
>10km	0.05***	0.01 – 0.23	0.09**	0.02 – 0.40	0.09***	0.02 – 0.40
Frequency of visits						
Very frequent	Ref.		Ref.		Ref.	
Frequent	0.40**	0.22 – 0.71	0.34***	0.18 – 0.63	0.34**	0.18 – 0.63
Infrequent	0.29*	0.10 – 0.87	0.24*	0.07 – 0.83	0.24*	0.07 – 0.82
Dwell time	0.72*	0.60 – 0.88	0.75*	0.61 – 0.92	0.76**	0.61 – 0.93
Journey purpose						
Not visiting friends/relatives	Ref.		Ref.		Ref.	
Visiting friends/relatives	3.73*	1.19 – 11.67	4.17*	1.03 – 16.82	4.21*	1.04 – 17.04
Easy_walkcycle_sum			1.73***	1.52 – 1.96	-	
Intervention						
Baseline					Ref.	
After					0.92	0.60 – 1.41

** p<.05, ** p<.01, *** p<.001*

Age, ethnicity, access to car or van, distance, frequency of daytime visits, travel group size and dwell time were statistically significant univariate predictors of walking or cycling (Model 2). Of the journey purpose variables, only leisure and visiting friends/relatives were significant univariate predictors. **Age, access to car or van, distance, frequency of visits, dwell time and visiting friends/relatives were also independent, multivariate predictors of walking and cycling (Model 3)**. Model 3 shows that those who were older, had access to a car or van, lived further away, made less frequent visits and had spent more time in the area on the day of the interview were less likely to have walked or cycled in the past year. Those who were visiting friends/relatives were more likely to have walked or cycled in the past year.

General perceptions of ease of walking and cycling was a significant predictor of walking or cycling. Those who perceived walking and cycling to be easier were more likely to have walked or cycled in the past year. All socio-demographic and behavioural predictors in Model 3 remained significant, independent predictors of walking and cycling after including perceived ease of walking and cycling in the multivariate model (Model 4).

The impact of the LSTF intervention on walking or cycling (DV_1) was non-significant, when included in the multivariate model with socio-demographic and behavioural predictors (Model 5). **The results showed no significant difference in walking and cycling following the LSTF intervention, after controlling for socio-demographic or behavioural differences.** There is therefore no robust evidence to suggest that the decrease in walking and cycling between the baseline and after period were due to the LSTF intervention.

Used any sustainable mode in the past year (DV_2)

Table A8 shows the results of the final multivariate models of socio-demographic, behavioural and general perceptions of ease of mode use as predictors of any sustainable mode use in the last year (DV_2).

Table A8. Socio-demographics, behavioural characteristics and perceived ease of mode choice as predictors of any sustainable mode use (DV_2)

	Model 3 1) socio-demographics; 2) behavioural factors (n=1239)		Model 4 1) socio-demographics; 2) behavioural factors; 3) ease of mode use (n=1239)		Model 5 1) socio-demographics; 2) behavioural factors; 3) intervention effect (n=1239)	
	OR	95% CI	OR	95% CI	OR	95% CI
Work status						
Not full-time employed	Ref.		Ref.		Ref.	
Full-time employed	0.64**	0.47 – 0.86	0.58**	0.43 – 0.80	0.59**	0.43 – 0.80
Access to car or van						
None	Ref.		Ref.		Ref.	
One or more	0.04***	0.03 – 0.07	0.04***	0.03 – 0.07	0.04***	0.03 – 0.07
Distance						
0 – 3km	Ref.		Ref.		Ref.	
3 – 5km	0.76	0.52 – 1.11	0.81	0.55 – 1.20	0.82	0.55 – 1.20
5 – 10km	0.60	0.39 – 0.93	0.71	0.46 – 1.10	0.72	0.46 – 1.12
>10km	0.41***	0.26 – 0.63	0.52**	0.33 – 0.83	0.54**	0.34 – 0.86
Frequency of visits						
Very frequent	Ref.		Ref.		Ref.	
Frequent	0.38***	0.27 – 0.54	0.40***	0.28 – 0.57	0.40***	0.28 – 0.57
Infrequent	0.37***	0.21 – 0.62	0.39**	0.23 – 0.66	0.38***	0.22 – 0.65
Travel group size						
Alone	Ref.		Ref.		Ref.	
One other person	0.84	0.61 – 1.17	0.89	0.64 – 1.25	0.91	0.65 – 1.28
Two or more others	0.57**	0.38 – 0.87	0.64*	0.42 – 0.97	0.64*	0.42 – 0.99
Easy_walkcycle_sum			1.15***	1.09 – 1.21	-	
Intervention						
Baseline					Ref.	
After					0.82	0.60 – 1.11

** p<.05, ** p<.01, *** p<.001*

Working status, access to car or van, distance, frequency of daytime visits, travel group size, change in frequency of visits, dwell time, convenience shopping (journey purpose) and leisure (journey purpose) were statistically significant univariate predictors of sustainable mode use (DV_2; Model 2). **Working status, access to car or van, distance, frequency of daytime visits and travel group size were also independent, multivariate predictors of any sustainable mode use (Model 3).** Model 3 shows that those who were full-time employed, had access to a car or van, lived more than 10 km away (vs. 0-3 km), visited less frequently and travelled with two or more other people were less likely to have used any sustainable mode in the past year.

General perceptions of ease of mode use was also a significant univariate predictor of sustainable mode use. Those who believed it was easier to use any of the sustainable modes were more likely to have used any sustainable mode. When including general perceptions of ease of mode use in the multivariate model, all socio-demographic and behavioural characteristics in Model 3 remained significant, independent predictors of any sustainable mode use (Model 4).

The impact of the LSTF intervention on any sustainable mode use (DV_2) was no longer statistically significant when included in the multivariate model with socio-demographic and behavioural predictors (Model 5). **This suggests that socio-demographic and behavioural differences account for the observed baseline-after difference in any sustainable mode use in the past year.**

A.4.3. Effect of awareness and perceptions of LSTF interventions on sustainable mode use (Model 7- 7a) – *Based on after data for Telford Shopping Centre (TSC) and Southwater (SW) respondents*

Combined sample

Overall, the self-reported change in frequency of sustainable mode use as a result of the recent transport schemes (DV_3) was modest, with an average sumscore of 0.14 (SD = 0.70) across all sustainable modes and 85% of TSC and SW respondents reporting no impact overall, due to:

- no noticeable change in frequency of modes that they used,
- not using sustainable modes (the majority of people), or
- having changed frequency of use for different sustainable modes in opposite directions (e.g. if someone takes the bus slightly less frequently (score = -1), but walks slightly more frequently (score = 1), then the sumscore would still be 0).

Table A9 describes the model results of awareness and perceptions of LSTF interventions as predictors of three sustainable mode use variables for the total sample (TSC and SW respondents) (Model 7).

Table A9. Perceptions of LSTF interventions as univariate predictor(s) of sustainable mode choice

Model 7	DV_1 (n=939)		DV_2 (n=939)		DV_3 (n=939)	
	OR	95% CI	OR	95% CI	B	95% CI
Aware_sum	1.08**	1.03 – 1.12	1.04**	1.01 – 1.07	0.03***	0.02 – 0.04
Accessimpact_sum	1.62***	1.32 – 2.00	1.53***	1.30 – 1.81	0.29***	0.24 – 0.34
Statements_sum (total)	0.99	0.96 – 1.03	0.98	0.96 – 1.00	0.02***	0.01 – 0.02
Statements_general_sum	*0.94*	*0.86 – 1.02*	*0.95*	*0.90 – 1.00*	*0.04****	*0.02 – 0.06*
Statements_coachcentral_sum	*0.98*	*0.90 – 1.07*	*0.95*	*0.90 – 1.01*	*0.02**	*0.00 – 0.04*
Statements_other_sum	*1.04*	*0.95 – 1.14*	*0.99*	*0.93 – 1.04*	*0.05****	*0.03 – 0.06*

** p<.05, ** p<.01, *** p<.001*

Awareness of the LSTF schemes (aware_sum) was a **significant univariate predictor** of having walked or cycled in the past year (DV_1; p<.01), any sustainable mode use (DV_2; p<.001) and self-reported change in frequency of sustainable mode use (DV_3; p<.001). However, the direction of causality, if any, is not clear. Those using sustainable modes have a higher level of exposure to all aspects of the transport environment, and it is not surprising they have higher levels of awareness. These results are based on the combined sample of TSC and SW respondents.

Perceived impact on town centre access (accessimpact_sum) was also a **significant univariate predictor** of having walked or cycled (DV_1; p<.001), any sustainable mode use (DV_2; p<.001) and self-reported change in frequency of sustainable mode use (DV_3; p<.001). These results are based on the combined sample of TSC and SW respondents.

Perceptions of transport changes associated with the LSTF measures (statements_sum) were **not associated** with either having walked or cycled (DV_1; ns.) or any sustainable mode use (DV_2; ns.). However, they were significantly associated with self-reported change in frequency of sustainable mode use (DV_3, p<.001), i.e. **respondents who held more positive perceptions about the recent transport changes were more likely to report an increase in use of sustainable modes than those who held more negative perceptions**. Further analysis with subsets of statements (statements_general_sum, statements_coachcentral_sum, statements_other_sum) showed that the pattern was similar for all subsets; there was no significant association between DV_1 or DV_2 and any of the subsets of statements, although there was a positive association with DV_3 for all subsets. These results are based on the combined sample of TSC and SW respondents.

Differences between TSC and SW respondents

Differences in the effect of awareness and perceptions of LSTF interventions on sustainable mode use between Telford Shopping Centre and Southwater Development (destination) were also tested. Only models with interactions between destination and awareness or perceptions of LSTF interventions significant at the .05 level are reported in full.

Awareness of the LSTF schemes - There were no interaction effects between destination and awareness on any of the three sustainable mode use variables (DV_1, DV_2, DV_3).

- Perceived impact on town centre access - Table A10. The effect of perceived impact on town centre access of LSTF interventions and destination on any sustainable mode use in the last year (DV_2) The effect of perceived impact on town centre access of LSTF interventions and destination on any sustainable mode use in the last year (DV_2)presents the results of a model with an interaction effect between destination and perceived impact on town centre access (accessimpact_sum; p<.01) on any sustainable mode use (DV_2; Model 7a):

- Subgroup analysis showed that perceived impact on town centre access of LSTF interventions only had an effect on any sustainable model use in the last year (DV_2) among users of the Telford Shopping Centre; there was no effect among Southwater Development users.

- There were no destination differences in the effect of perceived impact on town centre access of LSTF intervention on walking and cycling in the last year (DV_1) or self-reported change in sustainable mode use as a result of recent transport schemes (DV_3).

Table A10. The effect of perceived impact on town centre access of LSTF interventions and destination on any sustainable mode use in the last year (DV_2)

Model 7a	Telford after survey, total sample (n=939)		Telford Shopping Centre only (n=704)		Southwater Development only (n=235)	
	OR	95% CI	OR	95% CI	B	95% CI
Accessimpact_sum	1.76***	1.45 – 2.13	1.76***	1.01 – 1.07	0.95	0.64 – 1.41
Destination	1.52*	1.10 – 2.09	-		-	
Accessimpact_sum x destination	0.54**	0.35 – 0.84	-		-	

** p<.05, ** p<.01, *** p<.001*

Perceptions of transport changes associated with the LSTF measures - Table A11 shows the results of a model with an interaction effect between destination and perceptions of transport changes associated with LSTF measures (statements_sum; p<.05) on self-reported change in sustainable mode use (DV_3; Model 7a):

- Perceptions of transport changes associated with LSTF measures appeared to have a larger effect on self-reported change in sustainable mode use among Southwater Development users compared with Telford Shopping Centre users. However, the difference was not large, and the effect remained small even among the Southwater Development users (and may not be meaningful in practical terms).

- There were no destination differences in the effect of perceptions of transport changes associated with LSTFT measures on walking and cycling in the last year (DV_1) or any sustainable mode use (DV_2).

Table A11. The effect of perceptions of transport changes associated with LSTF measures and destination on self-reported change in sustainable mode use as a result of the recent transport schemes (DV_3)

Model 7a	Telford after survey, total sample (n=939)		Telford Shopping Centre only (n=704)		Southwater Development only (n=235)	
	B	95% CI	B	95% CI	B	95% CI
Statements_sum	0.01*	0.00 – 0.02	0.01*	0.00 – 0.02	0.04***	0.02 – 0.05
Destination	-0.22**	-0.35 – 0.08	-			
Statements_sum x destination	0.03*	0.00 – 0.05	-			

** p<.05, ** p<.01, *** p<.001*

A.4.5. Socio-demographic, behavioural and destination predictors of LSTF awareness and perceptions (model 9-10) – *Based on after data for Telford Shopping Centre (TSC) and Southwater (SW)*

The final set of models (Models 8-9) examined predictors of LSTF awareness and perceptions.

Awareness of LSTF schemes - Table A12 shows the results of multivariate models of socio-demographic, behavioural and destination characteristics as predictors of awareness of LSTF schemes:

Table A12. Multivariate socio-demographic, behavioural and destination predictors of perceived impact on awareness of LSTF schemes (awareness_sum)

Models 8-9	Telford after survey, total sample (n=765)		Telford Shopping Centre only (n=583)		Southwater Dev only (n=182)	
	B	95% CI	B	95% CI	B	95% CI
Distance						
0 – 3km	Ref.		Ref.		Ref.	
3 – 5km	-1.08**	-1.89 – -0.28	-1.03*	-1.99 – -0.07	-1.12	-2.56 – 0.32
5 – 10km	-0.72	-1.64 – 0.20	-0.48	-1.53 – 0.57	-0.71	-2.52 – 1.11
>10km	-4.17***	-5.12 - -3.22	-4.23***	-5.26 – -3.20	-1.94*	-3.54 – -0.33
Frequency of visits						
Very frequent	Ref.		Ref.		Ref.	
Frequent	-0.46	-1.17 – 0.25	-0.34	-1.17 – 0.49	-0.90	-2.30 – 0.51
Infrequent	-2.14***	-3.11 - -1.18	-2.04**	-3.24 – -0.83	-2.45**	-4.03 - -0.87
Destination						
Telford Shopping Centre	Ref.					
Southwater Development	-4.29***	-5.36 - -3.23				
Distance x destination	0.23*	0.05 – 0.42				

** p<.05, ** p<.01, *** p<.001*

Awareness of LSTF schemes was mainly predicted by behavioural and destination characteristics. Ethnicity, distance, frequency of visits, travel group size and destination were significant univariate predictors of awareness of LSTF schemes. Distance, frequency of visits and destination were also independent predictors of awareness of LSTF schemes in the multivariate model including all significant univariate predictors; ethnicity and travel group size were no longer statistically significant predictors. Furthermore, an interaction between distance and destination was statistically significant (p<.05), suggesting a destination difference in the effect of distance on awareness.

- Those living more than 10km away (vs. 0-3km; p<.001), visiting infrequently (vs. very frequently; p<.001) and users of the Southwater Development (vs. Telford Shopping Centre users) were **less likely to be aware of LSTF schemes**.
- Inversely, those living 0-3km away (vs. 3-5km and >10km) and those visiting very frequently (vs. infrequently) were **more likely to be aware of LSTF schemes**.
- **Southwater users** were **less likely to be aware of LSTF schemes** than Telford Shopping Centre users (p<.001).
- The effect of distance on LSTF awareness seemed stronger among Telford Shopping Centre users than Southwater Development users.

Perceived impact on town centre access – Table A13 shows the results of multivariate models of socio-demographic, behavioural and destination characteristics as predictors of perceived impact on town centre access (Models 8-9):

Table A13. Multivariate socio-demographic, behavioural and destination predictors of perceived impact of LSTF interventions on town centre access (accessimpact_sum)

Models 8-9	Telford after survey, total sample (n=765)		Telford Shopping Centre only (n=583)		Southwater Development only (n=182)	
	B	95% CI	B	95% CI	B	95% CI
Distance						
0 – 3km	Ref.		Ref.		Ref.	
3 – 5km	-0.10	-0.25 – 0.06	-0.10	-0.29 – 0.09	-0.08	-0.34 – 0.18
5 – 10km	-0.11	-0.28 – 0.06	-0.16	-0.36 – 0.05	0.06	-0.26 – 0.39
>10km	-0.38***	-0.52 – -0.24	-0.42***	-0.60 – -0.25	-0.24	-0.49 – 0.10
Travel group size						
Alone	Ref.		Ref.		Ref.	
One other person	-0.10	-0.24 – 0.03	-0.09	-0.24 – 0.06	0.11	-0.16 – 0.37
Two or more others	-0.27**	-0.44 – -0.09	-0.25**	-0.44 – -0.07	0.18	-0.10 – 0.46
Destination						
Telford Shopping Centre	Ref.					
Southwater Development	-0.46***	-0.69 – -0.22				
Group size x destination	0.24**	0.06 – 0.42				

** p<.05, ** p<.01, *** p<.001*

Perceived impact of LSTF interventions on town centre access had statistically significant behavioural and destination predictors but no socio-demographic predictors. Distance, access to car or van, frequency of visits, travel group size and destination were significant univariate predictors of perceived impact on town centre access. However, only distance, travel group size and destination were independent predictors in the multivariate model; access to car or van and frequency of visits were no longer significant predictors.

- Participants living more than 10 km away were less likely to perceive a positive impact on town centre access than those living 0-3 km away (p<.001).
- Southwater users were less likely to perceive a positive impact on town centre access than Telford Shopping Centre users (p<.001).
- Participants travelling with two or more others on the day of the interview also perceived the impact on town centre access to be more negative than those travelling alone. However, a subgroup analysis showed that this was only the case for Telford Shopping Centre Users; travel group size had no impact on perceptions of the LSTF impact on town centre access among Southwater Development users.

Perceptions of transport changes associated with the LSTF measures – Table A14 shows the results of multivariate models of socio-demographic, behavioural and destination characteristics as predictors of perceptions of transport changes associated with LSTF measures (Models 8-9):

Table A14. Multivariate socio-demographic, behavioural and destination predictors of perceptions of transport changes associated with LSTF measures (statements_sum)

Models 8-9	Telford after survey, total sample (n=765)	
	B	95% CI
Work status		
Not full-time employed	Ref.	
Full-time employed	1.25**	0.38 – 2.12
Access to car or van		
None	Ref.	
One or more	2.38***	1.39 – 3.37
Distance		
0 – 3km	Ref.	
3 – 5km	-0.92	-2.03 – 0.20
5 – 10km	-1.25	-2.51 – 0.02
>10km	-3.43***	-4.67 – -2.20

Frequency of visits		
Very frequent	Ref.	
Frequent	0.43	-0.57 – 1.43
Infrequent	-1.39*	-2.74 – -0.04
Destination		
Telford Shopping Centre	Ref.	
Southwater Development	-3.09***	-4.09 – -2.10

** p<.05, ** p<.01, *** p<.001*

Perceptions of transport changes associated with LSTF measures had the largest number of socio-demographic, behavioural and destination predictors. Working status, access to car or van, distance, frequency of visits, travel group size, dwell time and destination were all univariate predictors of perceptions of transport changes. Working status, access to car or van, distance, frequency of visits and destination were also independent predictors in a multivariate model; dwell time and travel group size were no longer significant predictors once included in a model with other predictors.

- Participants who were full-time employed were more likely to have positive perceptions of the transport changes than those who were not full-time employed.
- Participants with access to a car or van were also more likely to perceive the transport changes positively than those without access to a car or van.
- In contrast, participants who lived more than 10 km away were less likely to perceive the transport changes as positive than those living 0-3km away.
- Infrequent visitors were also less likely to perceive the transport changes positively than very frequent visitors.

Finally, **Southwater users** were also **less likely to perceive the transport changes positively** than Telford Shopping Centre users.

A.5. Results (Redhill)

A.5.1. Effect of implementing LSTF interventions on use of sustainable modes (Model 1)

The impact of implementing the LSTF interventions was first examined using univariate logistic regression models (Model 1; Table A15-A16).

Overall, 37% of town centre users had walked or cycled at baseline and compared with 43% in the after group (p<.05) – indicating a significant increase in walking and cycling use following LSTF intervention (the main analysis, reported elsewhere, shows that this is primarily due to an increase in walking).

Contrary to expectations, further analysis showed that the intervention effect on walking or cycling was only significant in areas other than North Redhill (p<.001; Table A15).

Table A15. Intervention effects on walking or cycling (DV_1)

Model 1	Univariate regression models		
	OR	95% CI	p-value
Intervention, Overall (n=1384)			
Baseline	Ref.		
After	1.28*	1.03 – 1.59	0.03
Intervention, North Redhill (n=316)			
Baseline	Ref.		
After	0.84	0.53 – 1.31	0.44
Intervention, Not North Redhill (n=1068)			
Baseline	Ref.		
After	1.63***	1.26 – 2.10	0.001

**p<.05, **p<.01, ***p<.001*

A large majority, 70%, had walked, cycled, taken the bus or taken the train (i.e. “used any sustainable mode”) at baseline compared with 73% in the “after” group. This was not a statistically significant difference between the baseline and after groups. Intervention effects were non-significant in both the Northern area and non-Northern areas. (Table A16)

Table A16. Intervention effects on walking or cycling, taking the bus or taking the train (DV_2)

Model 1	Univariate regression models		
	OR	95% CI	p-value
Intervention, Overall (n=1384)			
Baseline	Ref.		
After	1.12	0.89 – 1.41	0.35
Intervention, North Redhill (n=316)			
Baseline	Ref.		
After	1.34	0.74 – 2.42	0.34
Intervention, Not North Redhill (n=1068)			
Baseline	Ref.		
After	1.00	0.78 – 1.27	0.99

**p<.05, **p<.01, ***p<.001*

A.5.2. Effect of socio-demographic variables, behavioural characteristics, and general perceptions of ease of mode use on sustainable mode use (Models 2-5)

Univariate models of socio-demographic and behavioural predictors of sustainable mode use were tested, with significant predictors retained for multivariate testing. Journey purpose was not a significant predictor of sustainable mode use, except for leisure and living. However, due to their association with frequency of visits and distance, we excluded journey purpose from the multivariate analyses in order to retain frequency of

visits and distance in the models because these variables provided more relevant information for all users (as opposed to only a minority of users).

Walked or cycled in the past year (DV_1)

Table A17 shows the results of the final multivariate models of socio-demographics, behavioural characteristics and general perceptions of mode use as predictors of walking or cycling (DV_1).

Table A17. Socio-demographics, behavioural characteristics and perceived ease of mode choice as predictors of walking or cycling (DV_1)

	Model 3 1) socio-demographics; 2) behavioural factors (n=1144)		Model 4 1) socio-demographics; 2) behavioural factors; 3) ease of mode use (n=1144)		Model 5 1) socio-demographics; 2) behavioural factors; 3) intervention effect (n=828)	
	OR	95% CI			OR	95% CI
Age	0.77***	0.70 – 0.84	0.82***	0.74 – 0.90	0.73**	0.65 – 0.81
Mobility impaired			[ns., excl.]		[ns., excl.]	
Not mobility impaired	Ref.					
Mobility impaired	0.41***	0.25 – 0.67				
Car/van access						
None	Ref.		Ref.		Ref.	
One or more	0.43***	0.31 – 0.59	0.40***	0.28 – 0.58	0.45***	0.31 – 0.68
Distance						
0 – 3km	Ref.		Ref.		Ref.	
3 – 5km	0.11***	0.06 – 0.19	ns.		0.12	0.06 – 0.22
>5km	0.05***	0.03 – 0.08	0.10***	0.06 – 0.17	0.53	0.03 – 0.09
Frequency of visits						
Very frequent	Ref.		Ref.		Ref.	
Frequent	0.05***	0.18 – 0.57	0.29***	0.15 – 0.55	0.26***	0.13 – 0.51
Infrequent	0.32***	0.26 – 1.63	0.81	0.30 – 2.24	0.46	0.15 – 1.38
Travel group size			[ns., excl.]		[ns., excl.]	
Alone	Ref.					
One other person	1.10	0.75 – 1.59				
Two or more others	1.83*	1.11 – 3.01				
Dwell time	0.75***	0.66 – 0.86			0.69***	0.59 – 0.82
Easy_walkcycle_sum			1.91***	1.72 – 2.12	-	
Intervention						
Baseline – Not North					Ref.	
After – Not North					1.39^	0.95 – 2.02

*^ p = 0.09, * p<.05, ** p<.01, *** p<.001*

Gender, age, working status, ethnicity, mobility impairment, access to car or van, distance, frequency of daytime visits, travel group size, change in frequency of visits and dwell time were all statistically significant univariate predictors of walking or cycling (Model 2). However, **only age, mobility impairment, distance, frequency of visits and dwell time were independent, multivariate predictors of walking and cycling (Model 3)**. Model 3 shows that those who were older, were mobility impaired, lived further away, made less frequent visits and spent more time in the area on the day of the interview were less likely to have walked or cycled in the past year.

General perceptions of ease of walking and cycling was a strong significant predictor of walking or cycling. Those who perceived walking and cycling to be easier were more likely to have walked or cycled in the past year. After inclusion of general perceptions of ease of walking and cycling in the multivariate model, mobility impairment was no a longer significant model predictor (Model 4).

The impact of the LSTF intervention in the non-Northern areas on walking or cycling (DV_1) was non-significant, when included in the multivariate model with socio-demographic and behavioural predictors (Model 5). The impact of the LSTF intervention across all areas was also non-significant (not reported in table). Travel group size was excluded from the model once LSTF intervention was included because it was no longer a significant predictor. **Socio-demographic and behavioural differences therefore seem to account for the observed baseline-after difference in walking and cycling in the past year.**

Used any sustainable mode in the past year (DV_2)

Table A18 shows the results of the final multivariate models of socio-demographic, behavioural and general perceived ease of mode use as predictors of any sustainable mode use in the last year (DV_2).

Table A18. Socio-demographics, behavioural characteristics and perceived ease of mode choice as predictors of any sustainable mode use (DV_2)

	Model 3: 1) socio-demographics; 2) behavioural factors (n=1144)		Model 4: 1) socio-demographics; 2) behavioural factors; 3) ease of mode use (n=1144)		Model 5: 1) socio-demographics; 2) behavioural factors; 3) intervention effect (n=1144)	
	OR	95% CI	OR	95% CI	OR	95% CI
Gender						
Male	Ref.		Ref.		Ref.	
Female	0.73*	0.55 – 0.96	0.74*	0.56 – 0.99	0.71*	0.54 – 0.94
Ethnicity						
White	Ref.		Ref.		Ref.	
Non-white	0.52*	0.29 – 0.93	0.45*	0.24 – 0.82	0.53*	0.30 – 0.95
Access to car or van						
None	Ref.		Ref.		Ref.	
One or more	0.38***	0.25 - 057	0.13***	0.09 – 0.19	0.34***	0.26 – 0.45
Frequency of visits						
Very frequent	Ref.		Ref.		Ref.	
Frequent	0.40***	0.28 – 0.58	0.45***	0.30 – 0.65	0.39***	0.27 – 0.57
Infrequent	0.26***	0.15 – 0.47	0.33***	0.18 – 0.60	0.27***	0.15 – 0.48
Travel group size						
Alone	Ref.		[ns., excl.]		Ref.	
One other person	0.67**	0.49 – 0.90			0.68*	0.50 – 0.92
Two or more others	0.96	0.63 – 1.47			0.96	0.63 – 1.47
Easy_walkcyclebus_sum			1.27***	1.21 – 1.34		
Baseline					Ref.	
After					1.22	0.93 – 1.60

** p<.05, ** p<.01, *** p<.001*

Working status, access to car or van, frequency of daytime visits and travel group size were statistically significant univariate predictors of sustainable mode use (DV_2) (Model 2). Gender, ethnicity, access to car or van, frequency of visits and travel group size were independent, multivariate predictors of any sustainable mode use (Model 3). Model 3 shows that women, non-white participants, those who had access to a car or van, made less frequent visits and travelled with one other person (vs. alone) were less likely to have used any sustainable mode in the past year.

General perceptions of ease of mode use was also a significant univariate predictor of sustainable mode use. Those who believed it was easier to use any of the sustainable modes were more likely to have used any of the sustainable modes. When including general perceptions of ease of mode use in the multivariate model, travel group size was no longer a significant independent predictor of any sustainable mode use and was therefore excluded from Model 4.

The impact of the LSTF intervention on any sustainable mode use (DV_2) remained non-significant, when included in the multivariate model with socio-demographic and behavioural predictors (Model 5).

In summary, the results show no significant difference in use of any sustainable mode following the LSTF intervention, and this remains the case after controlling for socio-demographic or behavioural differences. There is no robust evidence to suggest that socio-demographic or behavioural differences between the baseline and after groups have masked any potential LSTF intervention impact.

A.5.3. Effect of awareness and perceptions of LSTF interventions on sustainable mode use (Model 7)

Overall, the perceived change in frequency of sustainable mode use (DV_3) was modest, with an average sumscore of 0.36 (SD = 1.29) across all sustainable modes and 71% of respondents reporting no impact.

Table A19 describes the model results of awareness and perceptions of LSTF interventions as predictors of three sustainable mode use variables (Model 7).

- Awareness of the LSTF schemes (aware_sum) was a significant univariate predictor of having walked or cycled in the past year (DV_1; p<.001), any sustainable mode use (DV_2; p<.001) and perceived change in frequency of sustainable mode use (DV_3; p<.01).

- Perceived impact on town centre access (accessimpact_sum) was also a significant univariate predictor of having walked or cycled (DV_1; p<.01), any sustainable mode use (DV_2; p<01) and perceived change in frequency of sustainable mode use (DV_3; p<.001).

- Perceptions of transport changes associated with the LSTF measures (statements_sum) were not associated with either having walked or cycled (DV_1; ns.) or any sustainable mode use (DV_2; ns.). Further analysis showed that none of the individual statements were significantly associated with DV_1 or DV_2 either. However, perceptions were significantly associated with perceived change in frequency of sustainable mode use (DV_3, p<.05), i.e. respondents with generally positive perceptions about the recent transport changes were more likely to report an increase in use of sustainable modes than those who held more negative perceptions.

Table A19. Perceptions of LSTF interventions as univariate predictor(s) of sustainable mode choice

Model 7	DV_1		DV_2		DV_3	
	OR	95% CI	OR	95% CI	B	95% CI
Aware_sum	1.08***	1.06 – 1.11	1.08***	1.05 – 1.11	0.02**	0.01 – 0.04
Accessimpact_sum	1.25**	1.06 – 1.47	1.34**	1.10 – 1.63	0.69***	0.60 – 0.78
Statements_sum	0.98	0.95 – 1.02	0.98	0.95 – 1.02	0.03*	0.00 – 0.05

** p<.05, ** p<.01, *** p<.001*

A.5.4. Socio-demographic and behaviour predictors of LSTF awareness and perceptions (Model 8-9)

Table A20 shows the results of multivariate models of socio-demographic and behavioural characteristics as predictors of awareness of LSTF schemes, perceived impact on town centre access and perceptions of LSTF interventions (Models 9-10).

- Awareness of LSTF schemes had the largest number of socio-demographic and behavioural predictors. Gender, age, ethnicity, distance, access to car or van and frequency of visits were significant univariate predictors of awareness of LSTF schemes. Ethnicity, distance, access to a car or van and frequency of visits were all independent predictors of awareness of LSTF schemes in the multivariate model; only age was not an independent predictor.

  - Non-white participants (vs. white; p<.05), those living more than 5km away (vs. 0-3 km; p<.001), those having access to at least one car or van (vs. none; p<.05) and those visiting frequently (vs. very frequent; p<.05) and infrequently (vs. very frequent; p<.001) were **less likely to be aware of LSTF schemes** (p<.05).

  - Inversely, white participants, those living 0-3km away (vs. >5km), those who did not have access to a car or van and those visiting very frequent were **more likely to be aware of LSTF schemes**.

- Perceived impact of LSTF interventions on town centre access had statistically significant socio-demographic predictors but no behavioural predictors. Gender and age were the only univariate and independent, multivariate predictors of perceived impact on town centre access.
  - **Women perceived the impact on town centre access slightly more negatively than men (p<.05), although the effect was very modest.**
  - **Older participants also perceived the impact on town centre access to be more negative than younger participants.**
- Perceptions of transport changes associated with LSTF interventions was only significantly predicted by age.
  - **Older participants had more negative perceptions of transport changes than younger participants (p<.01).**

Table A20. Multivariate socio-demographic and behavioural predictors of perceived impact on awareness of LSTF schemes, perceived impact on town centre access and perceptions of LSTF interventions

	Awareness of LSTF schemes (awareness_sum)		Perceived impact on town centre access (accessimpact_sum)		Perceptions of LSTF interventions (statements_sum)	
	B	95% CI	B	95% CI	B	95% CI
Gender	[ns., excl.]				[ns., excl.]	
Male			Ref.			
Female			-0.18*	-0.32- -0.04		
Age	[ns., excl.]		-0.04*	-0.08- -0.00	-0.25**	-0.42 - -0.09
Ethnicity			[ns., excl.]		[ns., excl.]	
White	Ref.					
Non-white	-1.76*	-3.35 - -0.16				
Distance			[ns., excl.]		[ns., excl.]	
0 – 3km	Ref.					
3 – 5km	-0.15	-1.68 – 1.37				
>5km	-2.66***	-3.76 - -1.55				
Access to car or van			[ns., excl.]		[ns., excl.]	
None	Ref.					
One or more	-1.17*	-2.14 - -0.19				
Frequency of visits			[ns., excl.]		[ns., excl.]	
Very frequent	Ref.					
Frequent	-1.80*	-3.18 - -0.42				
Infrequent	-5.40***	-7.66 - -3.15				

** p<.05, ** p<.01, *** p<.001*

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