Disappearing Traffic?
An Evaluation of Pedestrianisation in Taunton Town Centre
Disappearing Traffic? An Evaluation of Pedestrianisation in Taunton Town Centre

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1 Summary of Findings

This study evaluated the traffic and travel impacts of a trial pedestrianisation scheme in Taunton town centre. The scope of the scheme, and the research project, were both scaled back. The only road to be closed during the trial was a short section of St James Street, a one-way side street leading from Taunton’s main shopping street.

The closure did not cause any measurable change in travel behaviour in the streets most directly affected by the closure. Drivers living in that area simply changed their travel routes, driving up to 0.8 miles further in some cases. When considered alongside previous studies, this suggests that small-scale road closure schemes are likely to cause much displacement of traffic, and little if any traffic reduction or modal shift. To achieve those objectives, road closure schemes need to be implemented over a wider area.

A clear majority of the local residents approved of the Council’s decision to pedestrianise the street.

2 Background and Original Aims of the Study

2.1 The Original Aims

This study originally began with two main objectives:

1. To conduct a before-and-after evaluation of a town centre pedestrianisation scheme.
2. To measure the impact on traffic movements and travel behaviour to fill a gap in the literature about the reasons for ‘disappearing traffic’.

Cairns et al. (2002) identified the phenomenon of disappearing traffic, observing that when roads are closed the total volume of traffic in the immediate area usually falls. The reasons for that traffic reduction have never been measured for a permanent closure (there is some evidence from temporary closures). This study aimed to establish whether, and in what ways, a town centre road closure might change the travel behaviour of the people most affected, and to what extent any traffic reduction in the immediate area might be compensated by increases elsewhere.
2.2 The original scheme and Research Plan

Figure 1 – the Traffic Scheme and Evaluation as Originally Planned

Figure 1 illustrates the councils’ original Public Space Improvement Plan (PSIP) and two elements of the original research plan: the traffic counters and a self-contained area which would be intensively surveyed before and after the road closures. In addition, it was planned to survey pedestrians on the newly-pedestrianised Fore Street and some households elsewhere in the town to assess the impact on journeys which had previously crossed the town centre.
2.3 Changes to the Traffic Scheme and the Research Project

For the reasons outlined below, only one of the street sections, St. James Street, was ultimately pedestrianised, initially for a twelve-month trial starting in the summer of 2019. The councils had originally agreed to provide the traffic counters.

However, budgetary constraints prevented this. We agreed to pay for two temporary counters from the project budget; we hoped that these, plus readings from traffic signals, would provide sufficient data to assess the impacts on the traffic movements in the immediate area. Unfortunately, the data collected was incomplete and some of it seemed defective, so we were unable to use it for that purpose.

The scaling-back of the project made some of the original elements of the research project redundant. There could be no survey of a pedestrianised area on Fore Street, and the closure of St. James Street, on its own, would cause little disruption to cross-centre movements, so the rationale for surveys elsewhere in the town was also negated.

In discussion with the two funders, it was agreed to scale back the research project, focusing solely on the surveys of the self-contained area shown in Figure 1.

2.4 Reasons for the Scaling Back of the Traffic Scheme

There were several reasons why the PSIP has not been implemented as planned, so far – the councils have not ruled out further changes in future. The first problem related to budgetary constraints. The project was originally a collaboration between Taunton Deane District Council (which later merged to become Somerset West and Taunton) and Somerset County Council, which is the highway authority. Somerset experienced some severe budgetary pressures in late 2018, necessitating substantial cutbacks for the current and future years. The County Council did not wish to begin trial road closures unless the funds were available to make the permanent changes to the streets. Of the three target streets, the pedestrianisation of Fore Street would have been the most expensive. Discussions between the authorities identified some future funding possibilities, but it was decided to delay Fore Street and proceed with the other two.

In September 2018 safety audits were published for the two streets. The audit for St. James Street revealed no significant problems, but the pedestrianisation of Hammet Street would turn Church Street into a dead-end, requiring some larger vehicles, such as refuse trucks, to do a U-turn there (Figure 6). The auditors concluded that this would increase the risk of
some collisions and recommended some further analysis, although they did not conclude that it would make the scheme impossible.

In the autumn of 2018 the Council opened a public consultation on the plans for Hammet and St James Street. The councillors were keen to proceed with implementation before elections, which were scheduled for May 2019. The publication of the consultation provoked a hostile reaction from some business owners (which is common for such projects, as discussed below). As a result of these factors, the Council agreed to proceed with the pedestrianisation of St James Street only on a 12-month trial basis, starting in May 2019 – the date was published in the media on the day of the elections.

The elections produced a change of political leadership from Conservatives to Liberal Democrats. The Liberal Democrats' manifesto had promised a “traffic-free zone” in Taunton town centre and the new administration has never repudiated the plans (Somerset West and Taunton Liberal Democrats, 2019). However, at the time of writing, pedestrianisation of the other two streets appeared to have fallen down the political agenda and there were no firm plans to make any further changes.

2.5 Survey methodology

The self-contained area shown in Figure 1 was chosen because it contained a dense concentration of households in an area directly affected by the planned road closures. (It was ‘self-contained’ in the sense that all vehicular movements in and out could have been measured, if sufficient counters had been available, which unfortunately they were not.) It
contained 430 addresses. UWE commissioned Power Marketing to conduct the surveys. Trained surveyors knocked on doors in the self-contained area, returning on multiple occasions if necessary to maximise the response rates. After that, in the baseline survey, paper versions of the questionnaire were posted through letterboxes with a business reply envelope. That method only produced a few additional returns, so was not used in the final survey (which achieved a higher response rate in any case).

The two surveys were conducted at the same time of year in both waves to avoid any seasonal variation. The baseline survey was conducted from October to November in 2018, the final survey a year later in 2019.

The final survey is attached as Appendix 1. Most of the questions were identical to the baseline survey – the additional questions asked in the baseline survey are shown on Appendix 2. The questions aimed:

- to assess how people travelled before and after the closure
- to explore how the closure affected journeys which would have used St. James Street
- to gauge the strength of support or opposition to the proposals, and the implemented closure

It should be noted that the targeted section of St James Street was already one-way eastbound before the pedestrianisation, so the closure only affected return journeys (Hammet Street would have affected outward journeys if that closure had gone ahead). Inbound journeys which used to follow St James Street would now be diverted via Priory Bridge Road. This increased journey distances by 0.4 miles, for those coming from the northwest of the town and 0.8 miles for those coming from the southwest of the town.

3 Survey Findings

3.1 Demographic characteristics of sample

In total, 267 questionnaires were completed for the before survey and 342 for the after survey. The (observed or reported) gender split of respondents, in both before and after surveys, were similar and both slightly more female than male: In the before survey 45% were male, 55% were female (n=264). For the after survey, 47% were male, 53% female (n=332). Slightly more respondents in the before survey owned their own home in Taunton survey than in the after survey: In the before survey, 55.5% owned their own home whilst 45.5% did not, (n=265). In the after survey 51.5% owned their own home, whilst 48.5% did not, n=340). In the before survey 33% of respondents reported children under 18 years old living in the household and 67% did not (n=265). In the after survey 32% reported children and 68% did not (n=342).
Figure 7 Number of adults in household

Figure 7 shows the number of adults reported to live in the respondents' households. In the before survey 81% had 1 or 2 adults only, in the after survey the figure was 83%.

Figure 8 Job Status

Figure 8 shows the job status of the respondents. The data is divided into before and after surveys, with the number of respondents in each category indicated.
Figure 8 shows the job status of respondents. Across the two surveys combined, 49% reported being employed full-time, 22% reported being retired and only 2% were students.

Of 266 respondents who answered in the before survey, 66% owned a driving licence, 34% did not. Of the 327 respondents who answered in the after survey, 73% owned a driving licence and 27% did not. Of 192 respondents answering in the before survey, 84% drove a car or van whilst 16% did not. In the after survey, of 239 respondents answering, 88% drove a car or van whilst 12% did not.

Figure 9 below shows how many cars were available for use by the respondent’s household. The mean no. of cars for the before survey was 1.10 and for the after survey was 1.17.

![Figure 9 Cars available for use by respondents' household](image)

3.2 Driving behaviour relevant to study

Respondents were asked in both surveys about driving on the section of St. James Street that was pedestrianised\(^1\). The two samples reported broadly similar frequencies of driving on the street section, prior to pedestrianisation.

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\(^1\) This question was changed from ‘How often do you drive along the one-way section of St James Street (the short section opposite Debenhams)’ in the before survey, to ‘Earlier this year the Council pedestrianised a section of St James Street (The Short section opposite Debenhams). Approximately how often did you used to drive along that section before it was pedestrianised?’
Figure 10 How often do you/did you drive along the one-way section of St James Street?

Of 190 residents responding to a question in the after survey, 79.5% reported pedestrianisation of St James Street had changed their travel patterns and 20.5 reported it had not. Table 1 suggests that by far the most common change was travelling to the same places but taking a different route home (98% of those responding.) The other changes were reported by very small percentages of respondents only.

<table>
<thead>
<tr>
<th>Travel behaviour change</th>
<th>N =</th>
<th>Yes (Count)</th>
<th>No (Count)</th>
<th>Yes (%)</th>
<th>No (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I still drive to the same places, but take a different route home</td>
<td>147</td>
<td>144</td>
<td>3</td>
<td>98</td>
<td>2</td>
</tr>
<tr>
<td>I have stopped driving to some places</td>
<td>147</td>
<td>5</td>
<td>142</td>
<td>3</td>
<td>97</td>
</tr>
<tr>
<td>I drive less often to some places</td>
<td>147</td>
<td>3</td>
<td>144</td>
<td>2</td>
<td>98</td>
</tr>
<tr>
<td>I drive to some different places</td>
<td>147</td>
<td>2</td>
<td>145</td>
<td>1</td>
<td>99</td>
</tr>
<tr>
<td>I walk to some places instead of driving</td>
<td>147</td>
<td>6</td>
<td>141</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>I have made some other changes</td>
<td>147</td>
<td>1</td>
<td>146</td>
<td>1</td>
<td>99</td>
</tr>
</tbody>
</table>

Table 1 Travel behaviour changes in relation to pedestrianisation of St James Street section

In the before survey, participants were asked where they were coming from on the last occasion they remembered driving along the one-way section of St. James street. A broad-brush representation of their trip origins is given in Figure 11. 75% had come from the West of Taunton or the Town centre; only 14% of the journeys originated outside the town.
Respondents were asked to name any other travel changes they had made. 24 comments were given. Time of day appeared to be a factor for two participants, with one respondent saying the pedestrianisation ‘affects times we do things’, and another saying alternative routes were dependent on time of day. Four comments were given about journeys taking longer, one inferred increased pollution from this. Seventeen comments were simply road names of alternative routes. Eleven of these named Priory Bridge Road with two suggesting this depended on time of day. Three named Tancred street, and two named Canon street. Of the remaining miscellaneous comments, one commented there was ‘better traffic management’, one commented on increased taxi costs and another reported altered delivery to shops.

In both before and after surveys participants were asked what mode they used for their last trip outside their street. The reported modes used in before and after surveys is very similar.
Figure 13 shows the mode of travel to work of those reporting working outside of their home. The percentages using different modes were very similar in the before and after surveys, with driving a car or van accounting for 47% of respondents in each survey.

Respondents who travelled to study, were also asked about their mode of travel, but numbers (nine for the before survey, and 15 for the after survey) were too small to derive meaningful percentages. Of the nine in the before survey, three drove a car or van and three went on foot. Of the 15 in the after survey, five drove a car or van, six went on foot and three went by train.
Respondents were asked which mode they usually used to travel to their most regular place of food shopping. Results were very similar in before and after surveys, with driving a car or van being reported by 42% in the before survey and 43% in the after survey.
Figure 14 How respondents normally travel to their regular place of food shopping

3.3 Attitudes towards the road closures

In the before and after surveys, respondents were asked about their attitudes to the proposed, and then completed, pedestrianisation. Of 266 respondents in the before survey, 158 (60%) were aware of the council’s plans to pedestrianise Hammet Street and the one way section of St James Street. 107 (40%) were not previously aware. As shown in Figure 15 below, attitudes towards the closures were evenly distributed between approval and disapproval, with 42% approving of them to some degree, and 43% disapproving of them to some degree.
Respondents were asked in the after survey whether they thought pedestrianisation of St James Street had been a good decision. The data suggest that there had been some swing towards approving of the pedestrianisation, with 48% feeling it had been a good decision and only 32% considering it had been a poor one.
4 Discussion of Findings

The most striking aspect of the survey findings are the stability in the travel behaviour of the sample before and after the pedestrianisation of St James Street, shown in Figure 12 to Figure 14. The differences in the proportion driving were not statistically significant in any of those three questions (in Chi-square tests), for the last trip, journeys to work or journeys to shop. Table 1 showed the vast majority of drivers simply changed their route, with very little evidence of any other travel behaviour responses. The few people who did state that they had changed their behaviour might not be detectable in aggregate statistics, which are characterised by 'churn' – people changing their behaviour in opposite directions (Chatterjee, 2001).

Although we were not able to measure the impact on surrounding traffic, based on these survey results we would not expect to find any measurable reduction in traffic volumes – providing the cordons were drawn wide enough to capture all the diverted journeys.

One other factor which may have influenced the findings is the psychological trait of 'immediacy bias' or 'delay discounting' – people's judgements tend to be more influenced by the prospect of an immediate gain or inconvenience than they are by the knowledge of a gain or inconvenience later on. That principle has been established in experimental evidence (Madden et al., 2003), although it does not seem to have been explicitly tested in route or mode choice decision-making. In this case, the inconvenience for the residents occurred on the return journey only – because St James Street was already one-way pointing towards...
their homes, before the pedestrianisation. Would we have found more evidence of
behavioural change if Hammet Street were closed, disrupting the outward journeys?
In the absence of a specific test, we cannot be sure about that.

Considering these findings in the light of previous studies suggests another interpretation,
which may be advanced with more confidence. There is some evidence that area-wide road
closures, which disrupt traffic movements across a town or city centre for example, are likely
to cause significant traffic reductions in the surrounding area (Chapter 15 of Melia, 2015
discusses the example of Cambridge, Civitas Caravel, 2014 discusses Burgos). Cairns and
Goodwin (1998, a precursor to Cairns et al 2000) included several examples of temporary
closures, including road works and bridge closures, where surveys did find evidence of
behaviour change. It seems likely, therefore, that smaller-scale closures, involving less
disruption cause much displacement and little, if any, traffic reduction or modal shift (that
possibility was one of three hypotheses in Cairns and Goodwin, 1998)

Melia and Shergold’s (2018) study of Brighton Old Town came to a similar finding in this
respect. Like the Taunton example, the original plan would have removed through traffic
from Brighton’s Old Town. As in Taunton, a more limited scheme was implemented following
political and practical problems. One street was pedestrianised seven days a week and
another at weekends only. The vast majority of the traffic in and out of the Old Town simply
took a different route; a small increase in access by cycle was the only evidence of behaviour
change. That project also studied the political process followed. The current system, which
is risk-averse in respect of traffic impacts and the treatment of public objections, presents
many obstacles to UK authorities wanting to remove traffic from urban streets.

In Brighton, as here in Taunton, a clear majority of the public surveyed approved of the
changes (in Brighton, most would have preferred the Council to go further). Hass-Klau
(2015) and Melia (2015) describe some examples where public and business opinion
towards the pedestrianisation of an urban area became more favourable after
implementation. The unexpected changes to the scheme in Taunton (as in Brighton)
preclude a direct ‘before and after’ comparison, but it may be noted that the residents’
opinions expressed in the final survey (Figure 16) were more favourable than those in the
baseline survey (Figure 15, to a different question.)

5 Conclusions and Unanswered Questions for Future Research

The main conclusion of this study is that the pedestrianisation of one street made no
measurable difference to the travel behaviour of the residents most directly affected, apart
from re-routing their journeys by car. Comparing this finding to other studies suggests that
small-scale road closures involving limited disruption to traffic routes are likely to cause much
displacement onto surrounding roads and little, if any, traffic reduction or modal shift.

The residents most affected mainly supported the decision to pedestrianise the street after
the event, which is a common finding for pedestrianisation schemes.

Other studies have found more evidence of ‘disappearing traffic’ in the area surrounding road
closures in different contexts. It seems that larger-scale closures, causing more disruption to
traffic routes, are more likely to cause behaviour change and traffic reduction – at least in the
immediate area.

However, the curtailment of this project has prevented us from answering the main questions
we set out to answer. Why is ‘disappearing traffic’ observed to occur, and to what extent, if
any, are traffic reductions in the immediate area compensated by increases elsewhere?
As with Melia and Shergold (2018), the political challenges facing local authorities have prevented us from answering those questions, which have become more pressing in the meantime. The regulations requiring the UK to achieve net zero carbon emissions and local declarations of climate emergency have prompted several local authorities to consider bolder plans on traffic removal from city centres in particular (Drury, 2020), whilst the government has recently announced funding for more ‘mini Holland schemes’, which involve filtering to remove through traffic (H M Government, 2020). These proposals are always controversial. In the absence of clearer evidence about the impacts, public debate has been characterised by ideological assertions (see for example: Haynes, 2020).

Will any of these new proposals offer an opportunity to survey a traffic removal scheme which goes (roughly) according to plan, with research funding available at the right time? We remain optimistic – and open to offers.

References:


Good morning / afternoon, I work for Power Marketing Research

We are currently conducting a short survey about travel habits for the University of the West of England and Taunton Deane Borough Council. The survey takes about 8 to 10 minutes; we would be very interested in your views.

We will be entering all those taking part in a prize draw for three High Street vouchers worth £100 each.

1. Would you be interested in taking part?

   How many adults live in this household?

   

2. Are there any children under 18?

   Yes  
   No

   In total, how many cars or vans are owned, or available for use, by members of this household?

   (Number of vehicles: Include any company cars or vans available for private use)

   

3. Do you hold a full driving licence valid in Britain to drive a car?

   Yes  (Go to Question 5)  
   No (Go to Question 10)

4. Do you personally drive a car or van here in Taunton? (If your vehicle is temporarily unavailable but you normally drive here, say ‘yes’)

   Yes  (Go to Question 6)  
   No (Go to Question 10)

5. Earlier this year the Council pedestrianised a section of St. James Street (The short section opposite Debenhams). Approximately how often did you used to drive along that section before it was pedestrianised?

   1 3 or more times a week,  (Go to Question 7)  
   2 Once or twice a week,  (Go to Question 7)  
   3 Less than once a week  (Go to Question 7)  
   4 Never  (Go to Question 10)  
   5 It was already pedestrianised when I moved here  (Go to Question 10)

6. Has the pedestrianisation changed any of your travel patterns?
7. Which of the following changes have you made because that section of road was pedestrianised? (You may tick more than one)

1. I still drive to the same places, but take a different route home
2. I have stopped driving to some places
3. I drive less often to some places
4. I drive to some different places
5. I walk to some places instead of driving
6. I have made some other changes

What sort of other changes have you made (briefly)?

8. On the last trip you made to anywhere outside your home street, can you remember, where did you go? (Please give a postcode if known, or a street name or business name in Taunton or the name of another place, or N/A)

9. How did you travel there? (Please tick ONE choice only – the main method for the longest distance)

1. Car or van as a driver
2. Car or van as a passenger
3. On foot
4. Train
5. Bus
6. Motorcycle, scooter or moped
7. Cycle (including electric bike)
8. Other

10. Do you work or study outside of your home?

Yes
No

11. How do you normally travel to work or study? (Please tick ONE choice for each column – the main method for the longest distance)

<table>
<thead>
<tr>
<th></th>
<th>Work</th>
<th>Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Car or van as a driver</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Car or van as a passenger</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>On foot</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Train</td>
<td></td>
</tr>
</tbody>
</table>
12. Where do you normally do most of your shopping for food?  
(a specific business name e.g. Sainsbury’s County Walk Shopping, or street name in Taunton or the name of another place)

13. How do you normally travel there?  
(Please tick **ONE** choice only – the main method for the longest distance)

1. Car or van as a driver
2. Car or van as a passenger
3. On foot
4. Train
5. Bus
6. Motorcycle, scooter or moped
7. Cycle (including electric bike)
8. Other

14. Do you believe the Council was right to pedestrianise that section of St. James Street?

1. Yes
2. No
3. Don’t know

15. Do you own your own home, here in Taunton?

Yes  
No

16. Which **ONE** of the following **best** describes your job status?

1. Employed (full-time)
2. Employed (part-time)
3. Self-employed
4. Student
5. At home or caring for family
6. Retired
7. Unemployed
8. Other (please specify):

17. Observed Gender

1. Male
2. Female
3. Cannot be sure
18. The university would like to talk to a few people by telephone to ask some questions about the pedestrianisation of St James Street. Would you be willing to do a brief telephone interview?

Yes [ ]
No [ ]

19. If so, could you please provide your telephone number?

Telephone number: __________________________________________

Are there any other adults at home, who could take part in the survey?

INTERVIEWER - Please read out:

As part of our quality control process someone else from Power Marketing may contact you over the next 4 weeks - by telephone or email to confirm you took part in this survey and were happy with the way it was conducted. We will not contact you for any other purpose and your data will not be passed to a 3rd party.

ASK & RECORD - name, email / telephone etc

We also need these details for your entry into the Prize Draw

Name: __________________________________________

Email: __________________________________________

Telephone No: __________________________________________

Address / Postcode: __________________________________________

Please read out:

THANK YOU FOR YOUR TIME - I CAN ASSURE YOU THAT THE INFORMATION YOU HAVE GIVEN WILL BE TREATED AS ABSOLUTELY CONFIDENTIAL AND WILL BE HELD IN COMPLIANCE WITH THE GENERAL DATA PROTECTION REGULATION.

YOUR RESPONSES WILL BE MADE ANONYMOUS AND WILL ONLY BE USED AS PART OF A POOLED ANALYSIS.

INTERVIEWER DECLARATION:

I certify that this interview has been carried out strictly in accordance with your instructions and the MRS code of conduct

Interview completed by .......................................................... date:...............................
Appendix 2

Questions Asked in the Baseline Survey Only

How often do you drive along Hammet Street?
(The one-way street from St. Mary’s Church to the roundabout on Fore St.)

1. 3 or more times a week,  
(Go to Question 7)
2. Once or twice a week,  
(Go to Question 7)
3. Less than once a week  
(Go to Question 7)
4. Never  
(Go to Question 8)

On the last occasion you remember driving along Hammet Street, where were you were going?
(Please give a postcode if known, or a street name or business name in Taunton or the name of another place or N/A)

Were you aware of the Council’s plans to pedestrianise Hammet Street and the one-way section of St. James Street?

Yes  
No

What is your opinion of those plans?

1. I Strongly approve  
2. I Approve  
3. I Disapprove  
4. I Strongly disapprove  
5. I Don’t know