

**Cambridgeshire
Transport Innovation Fund**

Package Outline Proposal for
Funding

Social & Distributional Impacts
Supporting Statement

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1. Introduction

BACKGROUND

- 1.1 This Statement demonstrates our appraisal of the likely Social and Distributional Impacts (SDI) identified as a result of the 'Outline Proposal for Funding' which includes both the proposed congestion charging scheme and transport improvements.
- 1.2 The appraisal has been completed in accordance with DfT's Guidance TAG Unit 3.12.4 and provides a summary of the work undertaken to date. Cambridgeshire CC has been committed to undertaking a full assessment of the SDIs through the analysis of a comprehensive evidence base and social research.

REPORT STRUCTURE

- 1.3 Following on from this Introduction the remaining sections of the Statement are as follows:
 - ◆ *Section 2: Social Research Approach* - outlines the methodology undertaken to assess the social and distributional impacts;
 - ◆ *Section 3: Social and Distributional Key Findings* - provides a summary of the key findings from the data gathered to date;
 - ◆ *Section 4: Utilising Social Research* - discusses where and how social research has been used in the development of the 'Outline Proposal for Funding'; and
 - ◆ *Section 5: Summary* – provides a summary of the social and distributional impacts of the 'Outline Proposal for Funding'.
- 1.4 This Statement is supported by two Technical Appendices:
 - ◆ Appendix A: Social Research Evidence Base; and
 - ◆ Appendix B: Household Survey Analysis.

2. Social and Distributional Impact Methodology

ASSESSMENT APPROACH

- 2.1 A variety of research has been undertaken to assess the SDIs of the 'Outline Proposal for Funding'. The approach follows the five stage process as set out in the Department's Guidance.
- 2.2 Census (2001) and Indices of Multiple Deprivation (2004) datasets have been analysed to assess the socio-demographic and socio-economic characteristics of the County. This information has enabled the development of a local definition of those households most 'at risk' of any negative impacts as a result of the 'Outline Proposal for Funding'.
- 2.3 Cambridgeshire County Council's Accession model (v 1.5) has been interrogated to provide a series of accessibility plots and calculations to demonstrate accessibility levels (travel times) by public transport to key destinations. These calculations have been undertaken for different sectors of the population, journey purposes and for various time periods.
- 2.4 Building on this data analysis, quantitative social research in the form of household surveys has also been completed. These 1,000 face to face interviews utilised the pilot questionnaire developed and tested by DfT to ascertain respondents existing travel behaviour and how this may change as a result of a congestion charging scheme.
- 2.5 Information obtained from the survey has undergone detailed analysis to enable the completion of the research question as set out in the Departments Toolkit¹.

¹ Transport Innovation Fund Road pricing Household Surveys Analysis Toolkit. Working Document

3. Social and Distributional Impacts Findings

INTRODUCTION

- 3.1 The key SDI findings have been compiled from two main sources of data:
- ◆ Socio-demographic and accessibility evidence base; and
 - ◆ Quantitative Social Research.
- 3.2 Detailed analysis and findings are presented in the two supporting Appendices.

EVIDENCE BASE

Demographics

- 3.3 Cambridgeshire's population is estimated to have been around 563,000 in mid 2003 and it remains one of the fastest growing counties in England and Wales. The next 10 years forecast a similar picture with population expected to grow by 14% across the county. Nearly half of this growth will be in the over 60's age bracket; however changes to the elderly population vary considerably across the county.
- 3.4 The numbers of people aged 75 or over have fallen slightly in Cambridge City in recent years, as many adults move out of the City before they reach these older ages. This trend is likely to continue with the largest relative increases in the elderly population expected in Huntingdonshire, South Cambridgeshire and Fenland.
- 3.5 Such an ageing population manifests a number of issues related to healthcare and access. Sixty per cent of the population aged 75 or over, and 75% of the population aged 85 or over, have a limiting long-term illness. Consequently the number of elderly residents who will require regular access to a GP or hospital services may increase.

Deprivation

- 3.6 The East of England has relatively low levels of deprivation in comparison with the other English regions, with only 6.2% of the East's Super Output Areas (SOAs) falling within the 20% most deprived in England.
- 3.7 Analysis of the geographical spread of 'at risk' groups (ie lower income or car captive) demonstrates that the majority of the worst 30% SOAs in these categories are located within Cambridge City. Other clusters in the worst 30% within the County occur within Ely, Chatteris, Huntingdon and Soham.

Accessibility Levels

- 3.8 Residents' access levels to essential services have been analysed and categorised by four main journey purposes: Employment, Healthcare, Learning and Leisure, Cultural & Food Shopping. The key findings from this accessibility assessment are as follows:

Employment

- 3.9 Census (2001) 'Travel to Work' data demonstrates that the majority (90%) of those travelling into or within Cambridge City for work travel no further than 30km, and of these people 88% reside in Cambridgeshire and a further 5% reside in Suffolk.
- 3.10 The largest employers/employment sites within the County were identified and public transport access times to these sites calculated. 80% of all workable aged residents (16–74 year olds) can access their nearest employment site within a 30 min public transport journey time and 95% within an hour's journey.
- 3.11 However it is recognised that people do not generally work at their nearest employment site and hence a number of specific employment sites, for example the city centre, Addenbrookes Hospital and the Science Park have been examined in more detail.
- 3.12 The results show that 59% of all workable aged residents can access the city centre within an hour by public transport, 38% can access Addenbrookes Hospital and 41% the Science Park within an hour.

Healthcare

- 3.13 Some journeys to healthcare facilities involve constraints such as designated appointment times and hence negative impacts may exist for those that can not use alternative modes of transport and are still required to travel during a charging time period.
- 3.14 All residents living within Cambridgeshire City can access their nearest GP within 30 minutes using public transport, with the majority of residents within a 10 to 20 minutes public transport journey time.
- 3.15 Examination of accessibility levels to the main General hospitals in the area demonstrates that 73% of all Cambridgeshire residents can access their nearest hospital within a one hour public transport journey time.

Learning

- 3.16 All 5-11 years olds living within Cambridge City can access a primary school within a 30 min walk, 81% within a 10 min walk and 99% within a 20 min walk.
- 3.17 Examination of secondary schools access illustrates that 77% of Cambridgeshire households with 11-16 years olds are within a 30 mins public transport journey to their nearest school. This rises to 100% for households within Cambridge City.

Leisure, Cultural and Food Shopping

- 3.18 For the purpose of this research access to leisure has been assessed using leisure centres, shopping centres, main town centres and out of town complexes. The majority, 87% of Cambridgeshire residents can access one of these leisure sites within an hour's public transport journey time.

- 3.19 Examination of access levels to main supermarkets has been assessed for residents within Cambridge City. The results demonstrate that all residents can access their nearest supermarket within a 30 min public transport journey.
- 3.20 The above analysis demonstrates the current accessibility levels by public transport, and thus the levels of alternative travel modes available to residents who may want to switch from car as a result of the proposed congestion charging scheme.
- 3.21 Several tests have also been undertaken to demonstrate public transport access levels for key journeys as a result of the transport improvements proposed in the 'Outline Proposal for Funding'. These tests examined both current (2006) and future (2021) accessibility levels to the city centre (bus station), Cambridge Science Park and Addenbrookes Hospital and are presented in the tables below.

Table 1: Destination: Cambridge City Centre (Bus Station)

| % of Cambridgeshire Households | 2006 | 2021 | Difference |
|---------------------------------------|-------------|-------------|-------------------|
| within 45 mins | 37% | 41% | 4% |
| within 90 mins | 75% | 76% | 1% |
| no access within 90 mins | 25% | 24% | -1% |
| Average PT Journey Time | 45mins | 41 mins | - 4 mins |

Table 2: Destination: Cambridge Science Park

| % of Cambridgeshire Households | 2006 | 2021 | Difference |
|---------------------------------------|-------------|-------------|-------------------|
| within 45 mins | 27% | 34% | 7% |
| within 90 mins | 66% | 74% | 8% |
| no access within 90 mins | 34% | 26% | -8% |
| Average PT Journey Time | 54 mins | 47 mins | - 7 mins |

Table 3: Destination: Addenbrookes Hospital

| % of Cambridgeshire Households | 2006 | 2021 | Difference |
|---------------------------------------|-------------|-------------|-------------------|
| within 45 mins | 28% | 33% | 5% |
| within 90 mins | 68% | 74% | 6% |
| no access within 90 mins | 32% | 26% | -6% |
| Average PT Journey Time | 50 mins | 56 mins | - 6 mins |

- 3.22 The analysis shows that public transport journey times for the majority of residents has improved as a result of the transport improvements and has reduced journey times typically by 4-7 minutes. This level of journey time improvements will be further enhanced by the reduction of traffic entering Cambridge city centre and hence reducing the levels of congestion impacting on bus journey times and improving reliability and punctuality levels.

QUANTITATIVE SOCIAL RESEARCH

- 3.23 BMG Research undertook a series of household surveys on behalf of Cambridgeshire CC during June and July 2007. These surveys were administered in

accordance with the DfT's Guidance and 3,000 households were randomly selected from a Royal Mail Personal Address File.

- 3.24 The summary provided here is also supported by a separate document, Appendix B.
- 3.25 1,712 households were contacted and through a number of unsuccessful contacts including doorstep refusals and quality checking of responses the total sample sized assessed was 997 households.
- 3.26 The geographical breakdown of these responses is demonstrated in Table 4 below which shows that the majority of respondents are located in the rest of Cambridgeshire, as opposed to Cambridge City, which is comparable to the demographics of the County.

Table 4: Location of Respondents

| Zone | No of respondents | % of respondents |
|---------------------------------|--------------------------|-------------------------|
| Zone 1 (Inner Cambridge) | 38 | 3.8% |
| Zone 2 (Outer Cambridge) | 170 | 17% |
| Zone 3 (Rest of Cambridgeshire) | 789 | 79.2% |
| Total | 997 | 100% |

- 3.27 The socio demographic breakdown of survey respondents reveals the following;
 - ◆ 82% of respondents have at least one car in their household, with 36% having two or more cars;
 - ◆ For those who answered the question regarding household income, 30% stated this was less than £15,000 per annum, with 8% being over £50,000; and
 - ◆ In general the demographics of those surveyed were comparable with the demographics of Cambridgeshire as a whole.
- 3.28 The household survey results were analysed based on the research questions outlined in WebTAG guidance (Unit 3.12.4). These fall into four broad categories;
 - ◆ **Travel behaviour** – to identify who travels where and for what purpose within the zone;
 - ◆ **Travel Options (Choice and Flexibility)** – to identify the options or perceived options available in terms of alternative transport modes for those travelling by car;
 - ◆ **'Vulnerable' Groups** – using the analysis from the above categories to identify any groups that may suffer negative impacts; and
 - ◆ **Transport Improvements** – to test whether the transport improvements included within the 'Outline Proposal for Funding' mitigate against any negative impacts and to provide suitable recommendations for mitigation where necessary.

UNDERSTANDING TRAVEL BEHAVIOUR

- 3.29 Of those surveyed, 79% use private vehicles for at least one journey purpose compared with only 22% using public transport for at least one journey purpose.
- 3.30 Of those who use public transport, 62% also use a private vehicle for at least one trip, in comparison with only 17% of those using private vehicles also using public transport for at least one trip.
- 3.31 The socio-demographic breakdown of the private vehicle users sample suggests that it is the young (16 – 24 year olds) and older people (over 65) who also have a higher use of public transport, compared to the other age groups. Additionally, a much higher proportion (35%) of those with a household income of less than £15,000 use public transport than those in other income brackets, where an average of 19% use public transport.
- 3.32 Cycling is commonly used for work and university journeys, with the majority of these trips being made within the proposed congestion charging scheme area. There are likely to be benefits for those cycling into and around this area in terms of reduced traffic levels, leading to a safer environment and a reduction in pollution.
- 3.33 70% of those private vehicle users surveyed travel into or within the proposed congestion charging scheme area. A smaller proportion (62%) of those with a household income of less than £15,000 travel into or within the proposed congestion charging area compared with 72% of those from a higher income bracket.
- 3.34 The analysis found that, in general, the socio-demographic profile of those travelling into or within the proposed congestion charging scheme area at peak times was similar to the socio-demographic profile of the sample travelling across the rest of the county. This suggests that the proposed scheme does not disproportionately impact on any specific social groups, as no one group is more or less likely to be charged than another, based on the current situation.
- 3.35 The majority of trips being made by respondents into or within the proposed congestion charging area are for shopping purposes, however, when looking at the peak periods only, the main trip purpose is for work.
- 3.36 Those respondents travelling into or within the proposed congestion charging scheme area were asked whether or not they would pay an additional charge for each trip they make by private vehicle. A fairly high proportion (43%) of those with a household income of less than £15,000 stated that they would pay, perhaps suggesting a lack of alternatives and therefore a necessity of paying amongst these groups. Furthermore a higher proportion of those under 25, and over 65 would also be prepared to pay for their trips, although, there are fewer trips into the proposed congestion charging area made by these groups.
- 3.37 In terms of examining links between trip type and charging, a higher proportion of respondents would pay for work and health trips, compared with fewer being prepared to pay for school and shopping trips.
- 3.38 The DfT Toolkit defined those who had no alternative available, as well as those who have an alternative but whose trip type makes it difficult to switch to the alternative,

as being reliant on private vehicle. Based on this, work, health and shopping trips are most reliant on private vehicle.

- 3.39 Table 5 shows the number of people that travel into the proposed congestion charging area, for those trips with a high reliance on private vehicle.

Table 5: Private Vehicle Reliance

| Trip Type | Number of respondents travelling into charged area and reliant on private vehicle | Proportion of respondents (reliant on private vehicle) affected by proposed hours of operation of the scheme |
|------------------|--|---|
| Work | 45 | 15% |
| Shopping | 17 | 4% |
| Health | 27 | 15% |

- 3.40 The above table demonstrates that only a small proportion of those who stated that they were reliant on a private vehicle for certain journeys actually travel at times and into the area affected by the proposed congestion charging scheme. It can also be seen that whilst shopping was the most car reliant trip type, only 4% of those respondents travel into the proposed congestion charging area at peak times, and therefore few are likely to be affected by the scheme. This is likely to be because shopping trips are less constricted to set times of the day.

ALTERNATIVES AND FLEXIBILITY

- 3.41 A higher proportion of those respondents travelling into or within the proposed congestion charging area answered that they had alternatives available for their journey, compared to the overall sample. Cycling and bus were seen as the most viable alternatives to private vehicle for such trips.
- 3.42 In terms of trip type, respondents had fewer alternatives for work and shopping trips, whereas school escort trips had the most alternatives available. This would suggest that measures to support alternative modes of travel to school, may help to reduce those using private vehicle for this trip purpose.
- 3.43 47% of those using private vehicle for work trips, within the congestion charging area at peak times, also undertake another activity as part of this (described as 'trip chaining'). This is compared to 30% of those using private vehicle for work and travelling within the rest of the county. This might suggest a need for the use of the private vehicle for these respondents as they undertake multiple activities. The main activities undertaken as part of a work trip are shopping (22%) or taking children to school or childminders (12%).

POTENTIALLY VULNERABLE GROUPS

- 3.44 Those potentially 'at risk' from negative social and distributional impacts of the proposed congestion charging area scheme are those who are on lower incomes and who are car captive, in that they either cannot use alternative modes due to affordability and/or mobility, or these modes are not available to them.
- 3.45 In order to identify these groups from the household survey the Toolkit suggested that those who are; reliant on private vehicle, are affected by the scheme, and stated that they would not pay, are potentially 'at risk'. Tables 6 and 7 show those who are reliant on private vehicle and whether or not they would pay as a proportion of those making the trip in the proposed congestion charging scheme area. This is for work and health trips as these were the trips most reliant on private vehicle for trips within the congestion charging area at peak times.

Table 6: Work Trips

| | Would Pay | Would pay but also choice other options | Would not pay | TOTAL |
|---|------------|---|---------------|-------------|
| Private vehicle to work - alt available, can easily change | 18% | 9% | 73% | 100% |
| Private vehicle to work - alternative available, cannot easily change | 57% | 7% | 36% | 100% |
| Private vehicle to work - no alternatives available | 72% | 2% | 26% | 100% |
| TOTAL | 54% | 5% | 41% | 100% |

Table 7: Health Trips

| | Would Pay | Would pay but also choice other options | Would not pay | TOTAL |
|---|------------|---|---------------|------------|
| Private vehicle to health - alt available, can easily change | 0% | 0% | 0% | 0% |
| Private vehicle to health - alternative available, cannot easily change | 33% | 0% | 67% | 33% |
| Private vehicle to health - no alternatives available | 75% | 5% | 20% | 75% |
| TOTAL | 62% | 3% | 35% | 62% |

- 3.46 These show a general correlation between availability of alternatives and whether an individual would pay to make a particular trip. For example, of those who can easily change mode, 18% would pay for a work journey, whereas 73% would not pay. On

the other hand, of those with no alternatives available, 72% would pay and 26% would not pay.

TRANSPORT IMPROVEMENTS

- 3.47 The transport improvements proposed in the ‘Outline Proposal for Funding’ have been tested in Accession, to compare current public transport journey times to those journey times once the transport improvements are in place. Tables 1, 2 and 3 at the beginning of this section show these changes for three key destinations within the proposed congestion charging scheme area – Cambridge City Centre, Science Park and Addenbrookes hospital.
- 3.48 In addition to the above we have examined the changes in accessibility to the city centre for those groups identified as ‘at risk’ as demonstrated in Appendix A. Table 8 demonstrates that as a result of the ‘Outline Proposal for Funding’ residents located in ‘at risk’ areas experience improved public transport access to services within the city centre.

Table 8: Public Transport Accessibility Journey Times to City Centre from ‘at risk’ areas

| Journey Time to City Centre (mins) | 2006 | 2011 | 2016 | 2021 |
|---|-------------|-------------|-------------|-------------|
| 10 | 0% | 0% | 0% | 0% |
| 20 | 4% | 6% | 7% | 8% |
| 30 | 28% | 30% | 30% | 31% |
| 40 | 32% | 36% | 37% | 37% |
| 50 | 42% | 43% | 43% | 43% |
| 60 | 54% | 59% | 62% | 67% |
| 90 | 91% | 91% | 91% | 91% |

- 3.49 Further to the key work destinations tested in Accession, road side interview data has also been utilised to identify key destinations within the proposed congestion charging scheme area. The following were identified as key work destinations;
- ◆ Shire Hall;
 - ◆ Cambridge Regional College;
 - ◆ Cambridge City Airport;
 - ◆ British Antarctic Survey;
 - ◆ Marshall Motor Group;
 - ◆ Cambridge City Centre/Grafton Centre;
 - ◆ Trumpington;
 - ◆ Coldham’s Business Park; and
 - ◆ Westbrook Centre.
- 3.50 To complement the public transport improvements in the ‘Outline Proposal for Funding’ - many of which will provide improved access to these destinations - it is recommended that workplace travel plans be focused on these organisations to

ensure information and a wide package of initiatives are widely available to their employees.

- 3.51 In terms of proposed transport improvements arising from the findings of the household survey analysis it is suggested that school travel plans should focus on improving safe cycling and walking facilities, and initiatives to provide schoolchildren with alternative modes as this trip type was seen as having the most potential for use of alternative modes.
- 3.52 It has been identified that a series of focus groups with 'at risk' groups may be beneficial, feeding from the results of the quantitative social research and providing a more in depth account of people's views and experiences. Topics to be discussed could include identifying the trips people feel are 'essential', which trips by car they feel they could/would not make in a different way and the reasons why. The potential extent and scope of these focus groups is currently being determined.
- 3.53 The household survey analysis has identified work and shopping trips as most likely to be affected by the proposed congestion charging scheme. Therefore qualitative analysis may also need to focus on these groups. Furthermore the household survey analysis has suggested that focussed research with the following may be beneficial;
- ◆ College/Sixth form students (Cambridge Regional College);
 - ◆ Disabled/mobility impaired people;
 - ◆ Those living within the congestion charging area, but travelling to a destination outside;
 - ◆ Those living in areas with the least accessibility by public transport and making journeys into Cambridge;
 - ◆ Employees working within Cambridge but outside of the city centre ie those organisations outlined in Chapter 7;
 - ◆ Those living in Haverhill and Newmarket, which are heavily dependent on Cambridge for work journeys; and
 - ◆ Shift workers.

4. Utilising Social Research

- 4.1 Social research has been used at all stages of the design and development of the 'Outline Proposal for Funding'.
- 4.2 The socio-economic and socio-demographic analysis enabled the identification of 'at risk' areas in which we have sought to gain a representative sample size, for the purpose of the quantitative social research.
- 4.3 Accessibility analysis through the use of Accession has been used to assess gaps in the current alternative travel modes provision and hence develop a full package of transport improvements. These transport improvements have been subsequently tested in Accession to demonstrate the improvements in accessibility as a result of the 'Outline Proposal for Funding'.

5. Summary

- 5.1 This Statement provides the foundations for a detailed robust evidence base on which to monitor the social and distributional impacts before, during and after the implementation of the 'Outline Proposal for Funding'.
- 5.2 Census 2001 and IMD 2004 data was analysed to identify areas potentially 'at risk' from negative social and distributional impacts of the proposed congestion charging scheme area.
- 5.3 This then fed into the quantitative social research to ensure surveys were undertaken in these 'at risk' areas to maximise the usefulness of the data analysis.
- 5.4 Analysis of the household survey results has found that no particular social group is affected more than another by the scheme proposals, and that those most likely to be affected, are most likely to be so because of their reliance on private vehicle which may be caused by a number of factors, including;
 - ◆ Geographical location which means public transport is not a viable alternative;
 - ◆ Making multiple trips, meaning that having the flexibility of private vehicle is a necessity;
 - ◆ Lack of awareness of public transport alternatives; and
 - ◆ Location of workplace and/or shift patterns.
- 5.5 In general it was found that those travelling into the proposed congestion charging area, were more likely to have alternatives, and less likely to be reliant on private vehicle, than those in the sample as a whole.
- 5.6 Further qualitative research will investigate the reasons for reliance on the private vehicle for some people travelling into the proposed congestion charging area, particularly for those on lower incomes. This will help ensure that the effects can be mitigated.