Evaluation of the Cycling City and Towns Programme: Interim report appendices

Appendix A - Survey Method and Response

1. Introduction

This Technical Appendix provides a summary of the background to the baseline survey and details on the survey method and responses rates for each element of the baseline survey.

2. Background

An overarching objective of the evaluation is to provide robust evidence about the programme-wide impacts of the Cycling City and Towns (CCT) investment, in terms of cycling and travel behaviour change, physical activity and wider impacts. The evaluation also aims to identify if there has been a change in the proportion of people cycling and that are physically active in each CCT. In addition, the evaluation seeks to find out how CCTs have influenced perceptions and attitudes to cycling.

To inform these objectives a programme of household surveys was planned. This was to involve a **baseline** survey to provide robust measurement of physical activity, cycling and travel behaviour in each CCT, and a **repeat** survey following the investment programme to identify any changes in behaviour, perceptions and attitudes. The analysis of change in cycling behaviour from the survey will be triangulated by monitoring data from automatic cycle counters installed in the CCTs, and explored qualitatively using in-depth interviews and accompanied journeys with residents of the CCTs. To assist with attributing the observed changes to the investment, the survey data will be compared to a counterfactual drawn from National Travel Survey (NTS) data (details below).

The household survey programme has been designed to measure the following key indicators. These indicators were derived in response to the study research specification, a review of the evaluation work undertaken for the six original Cycle Demonstration Towns, a detailed review of previous research studies into cycling and discussions with the client team. These will be referred to as indicators 1-5 in the text that follows:

1 Change in the proportion of people cycling (defined in terms of riding a bicycle in the last 12 months and if cycle at least once a week);

2 Change in the proportion of people of different cyclist status (defined in terms of new to cycling in last 12 months, starting to cycle again after a break of 12 months or more, have been cycling for more than 12 months, do not cycle);

3 Change in the proportion of people with different levels of physical activity;

4 Change in travel by different modes in terms of trip frequency and travel distance and time spent (by travel purpose) at the household and individual level; and

5 Change in perceptions of and attitudes towards cycling.

The baseline survey has been completed and it provides data on behaviour and attitudes in relation to cycling and physical activity near the start of the investment programme (in 2009). When the baseline survey is repeated after the programme has finished, it will be possible to compare the baseline and repeat surveys to establish if there have been any changes in relation to the five indicators outlined above. This analysis will inform an assessment of the impact of the investment shortly after the current funding programme has been completed. As far as possible,

this repeat survey will be with the same respondents who took part in the baseline survey (with some refreshment of the sample to take account of sample aging and attrition).

In the following sections we describe the approach to the baseline survey.

3 Baseline Survey Method

A three stage interview process was undertaken to collect the baseline data for indicators 1-5:

- Stage 1: Household Interview Survey (indicators 1-3);
- Stage 2: 7 Day Travel Diary (indicator 4); and
- Stage 3: Self-completion Questionnaire on attitudes to cycling (indicator 5)

The baseline survey was conducted to a random probability survey design (a description of the sampling method is given in the next section). A random probability approach was required to provide an accurate measure of change between baseline and repeat surveys in relation to indicators 1-5. With any sample there is a margin of error associated with quoted statistics which is dependent on the sample size and design, and this needs to be calculated to demonstrate the accuracy of the statistics. The margin of error can only be calculated accurately with a random survey design.

The main survey method was a household face-to-face interview survey conducted in respondents' homes. Sampling households allows advantage to be taken of the Postal Address File, a comprehensive sampling frame. Face-to-face interviews are more expensive and require better trained and skilled field workers than telephone interviews or postal questionnaires, but they enable better quality data to be acquired as the interviewer can provide explanation and clarification tailored to individuals. A higher survey response rate can be achieved than other methods as the interviewer can arrange to conduct the survey at a time convenient to the household. Two further benefits of face-to-face interviews are that longer interview durations can be achieved than telephone interviews and that a rapport can be built up with respondents to encourage them to participate in supplementary survey activities.

The data for indicators 1-3 was collected from face-to-face interviews with household members (adults aged 16 and over, and children aged 5-15). The data for indicator 4 was collected through a self-completion 7 day travel diary which was placed with respondents after they had taken part in the household interview survey. This approach was required to obtain a record of actual travel undertaken and therefore more accurate and robust data on trip frequency, distance and time spent than would be possible by other methods.

A 7 day travel diary is the common measurement method adopted for the National Travel Survey (NTS) and will allow comparisons of travel behaviour between the CCTs and other areas/populations of Great Britain. It is important to note that this survey is not directly comparable with NTS as it only collected a proportion of the data covered in NTS and it collected additional data to that collected in NTS (for example, data relating to physical activity). However, the travel diary design was similar to that used by NTS and it is the intention to use the trends in travel behaviour in selected areas of England (i.e. medium-to-large urban areas) observed over the equivalent period in NTS to contribute to estimating the counterfactual in the CCTs (i.e. changes in overall cycling that would have taken place in the absence of the programme).

At the end of the interview process all adults were given a self-completion questionnaire survey on attitudes to cycling to obtain data for indicator 5.

The survey approach was to interview all household members in each sampled household. This was preferable to selecting one person per household as this would bias the sample to single person households and assumptions would need to be made about the travel behaviour of other household members. It also enabled household interactions in cycling behaviour to be explored as part of the analysis.

4 Survey Timing

The baseline survey was undertaken between July and November 2009. The time of year is a period when cycling is believed to be more prevalent than at other times of the year. Any repeat surveys will therefore need to take place in these months in future years to provide comparable data. The CCT delivery programmes commenced between October 2008 and March 2009 but the majority of investment activity had not taken place by the time of the surveys (CCTs required time to develop their strategies and set up delivery teams, etc). Questions were included in the survey on changes in cycling behaviour in the last 12 months and this provides an indication of the initial impact of the programme. Furthermore, cycle count data has been collected from an earlier date than the survey and will be able to be used to obtain longer term trends in overall levels of cycling in the CCTs.

5 Sample Size

The first consideration in determining the sample size for the baseline survey was to estimate the level of change anticipated for key indicators 1-5 over a three to five year period. The following levels of change were agreed for the sample size calculations based on the results from previous studies of the impacts of cycling investment (including results from the Cycle Demonstration Towns):

- A 3% point increase in people cycling (indicator 1). This would be measured through the household interview survey; and
- A 20% increase in cycle trips (indicator 4). This would be measured through the 7 day travel diary survey.

Power calculations showed that to robustly detect the above changes in each CCT would have required the following sample sizes:

- 1,250 households to measure indicator 1 (by household interview); and
- 5,100 households to measure indicator 4 (by 7 day travel diary).

It was not considered feasible (in terms of budget or time availability) to survey 5,100 households in each CCT. Consequently it was decided that indicator 4 would only be measured at programme level (across all towns). This would require 7 day travel diaries to be completed with 5,100 households across all 12 towns.

The following sample sizes were therefore agreed for the surveys:

- Stage 1: Household Interview Survey with 15,000 households (1,250 households per town). This would involve an interview with each household member to measure indicators 1-3; and
- Stage 2: Travel Diary Survey with 5,100 households. This would be a survey with a sub sample of households from Stage 1, with each household member completing a 7 day travel diary to measure indicator 4.
- Stage 3: Self-completion Questionnaire placed with all adults (at the end of interview for those not participating in travel diary survey and when travel diaries were collected for those participating in travel diary survey).

The sample size calculations assumed that on average two persons per household would complete the Stage 1 and Stage 2 interviews. This meant the target for achieved interviews was a total of 30,000 individual interviews for the Stage 1 household interview survey and 10,200 completed 7 day travel diaries for the Stage 2 travel diary survey.

6 Sample Design

A random probability sampling approach was used. This involved a two-stage clustered sample design in each CCT. Output Areas (OA) (which typically contain 125 households) were selected at random in each CCT and a small number of addresses selected at random from each OA. The clustered design enabled more efficient fieldwork to be carried out and the small number of addresses selected in each OA ensured that there would not be adverse impacts on sampling errors.

The first stage in the sampling process was to define the study area in each CCT; that is the geographic area within each CCT where the investment in cycling was being targeted. A set of maps showing the study area in each CCT were agreed with the client team.

In each CCT study area the next stage was to sample OAs. Our approach was to select a random sample of OAs in each CCT study area and then within each OA (using the Postal Address File) to randomly select addresses for interview.

The approach to sampling OAs and addresses in each CCT study area was as follows:

- Within each CCT study area and based on past experience we expected sampled addresses to contain about 10% 'deadwood' (ineligible addresses, empty properties etc). We also anticipated a survey response rate of around 60%;
- In each town we randomly sampled 200 OAs and then randomly sampled 12 addresses in each OA plus a reserve sample of 3 addresses per OA. This meant that 36,000 addresses were sampled in total across all towns (3,000 per CCT) and;
- Interviewers would attempt to achieve 6-7 household interviews per OA to meet the target of 1,250 households per CCT.

As the Stage 2 travel diary survey was planned with a smaller sample of households, prior to interview we randomly sampled a sub-set of addresses from the Stage 1 sample described above to take part in the travel diary survey. Based on past experience we expected that around 75-80% of those households approached to complete the diary would take part. We randomly sampled 5 addresses plus 2 reserve addresses from the Stage 1 sample in each OA. This meant that 16,800 addresses were sampled in total across all towns for the 7 day travel diary survey (1,400 per CCT).

For both Stage 1 and 2 we sampled equal numbers of households and aimed to conduct broadly equal numbers of interviews in each town. This was required for the Stage 1 household interview to ensure we achieved around 1,250 household interviews per CCT (the target to provide robust data to measure indicators 1-3 at town level).

For the Stage 2 travel diary survey we also aimed for roughly equal proportions of completed travel diaries in each CCT (approximately 420 households per CCT). This was required to provide the most robust data at programme level as too few diaries completed in one town and more in others would have compromised the validity of the programme level (across CCT) data.

7 Survey Questionnaires

In this section there is a description of the questionnaires that were used in the baseline survey, including an explanation of their content and to whom they were targeted. These questionnaires were subject to cognitive testing and piloting in June 2009.

Stage 1: Household Interview Survey

This involved a short interview (10 minutes on average per person) with each household member. There were two versions of the Stage 1 questionnaire which are summarised as follows:

Adult Questionnaire (aged 16 plus) – This covered the following topic areas for each adult household member:

- Section A: Physical activity (indicator 3);
- Section B: Travel behaviour (mostly focused on cycling behaviour) (indicators 1-2);
- Section C: Individual demographics;
- Section D: Household information (only collected from one adult in each household); and
- Section E: Contact details, willingness to take part in further research and willingness to complete the travel diary if sampled for Stage 2.

Child Questionnaire (aged 5-15) – This interview was conducted by proxy with parents/guardians but where possible with children/young people present to verify responses. This covered the following topic areas for each child aged 5-15:

- Section A: Travel to school and physical activity (indicator 3)
- Section B: Cycling behaviour (indicators 1-2);
- Section C: Individual demographics; and
- Section E: Contact details, willingness to take part in further research and willingness to complete the travel diary if sampled for Stage 2.

The proxy approach was used for children as experience has shown that more valid information about travel behaviour can be obtained from parents/guardians than children.

The key decisions on questionnaire content are now briefly summarised. It was not considered feasible given the sample sizes of the survey to achieve objective measurement of physical activity through activity monitors (e.g. accelerometers). Physical activity information was obtained in the household interview for adults through self-recall questions from the European Prospective Investigation into Cancer (EPIC) study. This was also the basis for measuring physical activity in the Cycle Demonstration Towns. The questions ask about physical activity at work and the typical time spent per week in six different types of non-occupational physical activity (walking, cycling, gardening, housework, DIY and other physical exercise and sport).The survey also asked adults the number of days in the past week where they had done a total of at least 30 minutes physical activity (excluding occupational physical activity and housework) which raised their breathing rate.

There is evidence from the Health Survey for England[1] to suspect over-estimation of physical activity in self-reporting (due in particular to social desirability bias), but studies[2] have shown the validity of indices of physical activity based on EPIC questions against objective measures of energy expenditure. Further information about the EPIC physical activity index used to analyse the baseline survey data is provided in Appendix C.

It has been established that time spent in sedentary activities is a separate disease risk factor to physical inactivity[3] and it is therefore of interest whether higher levels of cycling activity are associated with reduced sedentary time. The survey included a question on the time spent per day in a typical week over the last year in sedentary screen-based activities (in particular watching TV and using a computer at home).

Survey respondents were also asked to provide a self-assessment of their health (over the last four weeks) compared to other people of the same age and gender. No further attempt was made to measure health in the survey, as this would require objective methods (such as height, weight, heart rate monitoring), which would not be feasible given the other requirements of the survey.

For children a different approach to measuring physical activity had to be adopted. A review highlighted the lack of validated self-report or proxy-report physical activity survey instruments for children. However, a review[4] of environmental correlates of physical activity in young people reported that time spent outdoors has been found to be a positive correlate. For children, the survey included questions on the amount of time per day that has typically been spent outside in the last year. The survey also asked about the amount of time spent participating in organised exercise and sport to provide supplementary information on a type of physical activity that may be complementary or substitutable by cycling.

A study[5] of children aged 10 to 12 years found that being allowed to walk on their own near where they lived was significantly associated with greater time spent outdoors. Hence parents were asked whether children were allowed to go out on their own near where they lived in the interview. Parents were also asked about the typical amount of time their children spent on sedentary screen-based activities and to assess their child's health compared to other children of their age and gender.

The travel diary is being used to obtain detailed trip-making data for the sub-sample of households selected for the travel diary, but it was desirable to obtain cycling behaviour information for all respondents (indicators 1-2). Adults were asked about the journey to work, availability of a bicycle, frequency of use of a bicycle, journey purposes for which bicycle used, whether they regard themselves as an experienced or new cyclist and about any cycling trips during the previous week. For children,

1 Craig, R., Mindell, J. and Hirani, V (eds) (2009). *Health Survey for England 2008: Volume 1. Physical Activity and Fitness*. The NHS Information Centre, Leeds.
2 Wareham, N.J., Jakes, R.W., Rennie, K.L., Schuit, J., Mitchell, J., Hennings, S. and Day, N.E. (2003).Validity and repeatability of a simple index derived from the short physical activity questionnaire used in the European Prospective Investigation into Cancer and Nutrition (EPIC) study. *Public Health Nutrition*, 6(4), 407-413.
3 WHO (2002). World Health Report. World Health Organisation, Geneva, 2002.
4 Ferreira, I., van der Horst, K., Wendel-Vos, W., Kremers, S., van Lenthe, F.J. and Brug, J. (2006). Environmental correlates of physical activity in youth - a review and update. *Obesity Reviews*, 8, 129–154.
5 Wen, L.M., Kite, J., Merom, D. and Rissel, C. (2009). Time spent playing outdoors after school and its relationship with independent mobility: a cross-sectional survey of children aged 10–12 years in Sydney, Australia. *International Journal of Behavioral Nutrition and Physical Activity*, 6(15).

similar questions were asked, but with respect to the journey to school instead of journey to work. It was additionally asked if child had undertaken cycle training.

One of the main cycling behaviour questions in the household interview survey was the frequency of using a bicycle (measured in number of trips per week). In response to the same question, NTS has found in recent years (2003 to 2008) that 14% of people aged 5 and above say they cycle at least once per week. However, an examination of the 2006 NTS data showed that only 5% of travel diary respondents reported cycling during the survey week. This highlights systematic differences in behaviour depending on the method of self-reporting. It would be expected that travel diary results would be more accurate as they focus on a specific period and entail recording of actual trips. However, it is known that there is under-reporting of trips in travel diaries (especially walk trips) and travel diary results may under-estimate cycle travel.

The household interview survey also sought socio-demographic information for each household member on their age, gender, ethnicity, driving licence status, access to car, educational qualifications and employment status. One adult per household was asked about the dwelling and household motor vehicles.

Stage 2: Travel Diary Survey
This involved placing a 7 day travel diary with each household member in the households randomly sampled from the Stage 1 sample. There were two versions of the Travel Diary.

- Adult 7 day travel diary. This was placed with all adult household members (those aged 16 plus) identified during the Stage 1 interview.

- Child 7 day travel diary. This was placed with households for completion by 5-15 year old household members or by proxy by their parents/guardians.

The travel diary has been designed based on the NTS diary format so that advantage can be taken of the many years of experience that have informed its design. As with NTS, separate diaries were designed for adults and children (aged 5 to 15). In both cases, the travel diary was used by respondents to include details of all trips that they undertake during the week they were allocated.

The travel diary was implemented using the same approach as NTS but with the following exceptions:

- The household interviews (Stage 1) conducted with each household member prior to diary placement excluded a large number of questions covered in the NTS placement interview (access to local facilities and public transport, etc) as these were not of primary relevance to the evaluation. Including these questions would also have made the interview process too long, onerous and expensive;
- The 7 day travel diary did not include questions on the cost of parking, tolls, cost of public transport and ticket types from NTS as this information is of little relevance to the evaluation objectives;
- All walking trips of any length were requested on all seven days. In comparison NTS excludes walking journeys under 1 mile except for on the final survey day when all walking trips are recorded. It was important to seek data on all walking trips as it is of particular interest to this evaluation to consider any possible substitution of walking by cycling. Piloting showed it was not very onerous for respondents to record all walking trips; and

- While every effort was made to make sure all sampled household members completed a 7 day diary we decided that households where some household members failed to complete the diary would be included in the final dataset. This varies from NTS where only households where a full set of diaries are received are included. We felt this approach would have meant rejecting data which may be useful to the evaluation.

Stage 3: Self-Completion Attitudes Questionnaire
A self completion questionnaire on attitudes to cycling was placed with all adult respondents at the end of their involvement in the survey. At households not taking part in the travel diary survey the self-completion questionnaire was placed following completion of the Stage 1 interviews with all household members. At households taking part in the travel diary survey this was when they were re-visited by interviewers to collect travel diaries. Placing the self-completion questionnaire after completion of the Stage 1 and Stage 2 interviews was required in order to reduce the potential for the attitudes questionnaire to influence responses to behaviour questions.

The questionnaire was designed to examine differences in opinions and attitudes about cycling between the baseline and repeat surveys and to allow relationships between cycling behaviour and cycling opinions and attitudes to be analysed (and changes in these relationships to be explored between the baseline and repeat surveys). It will enable testing of the hypothesised intervention mechanisms or *theories of change*, which are being identified through in-depth interviews with the local delivery teams (see main report, section 7).

Figure 1 is a conceptual model of the factors that influence an individual's cycling behaviour that has informed the design of the attitudes questionnaire. It shows how attitudes (the term 'attitudes' is being used in a broad sense here, encompassing constructs such as beliefs, attitudes, norms - it would be more accurate to use the term 'subjective assessments'), along with facilitating factors, determine behaviour. It also recognises that attitudes are formed based on characteristics of individuals and the experiences that they have.

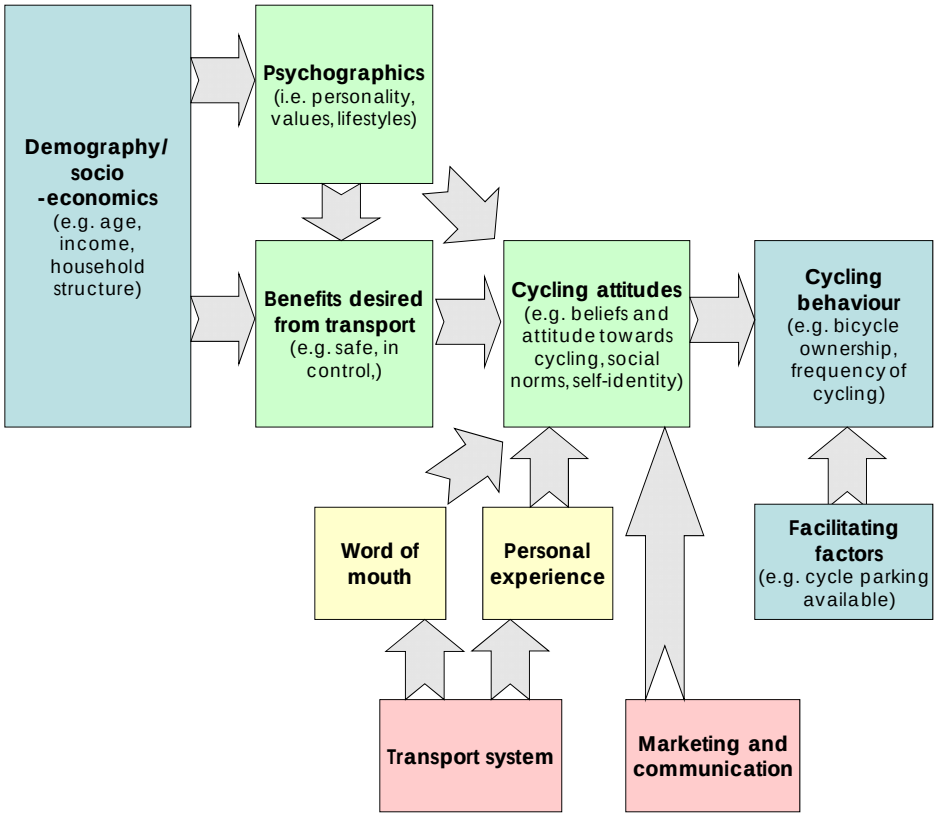

Figure 1: Role of Attitudes in Cycling Behaviour

The household interview and travel diary obtained information on demographics/ socio-economics and cycling behaviour. The attitudes questionnaire obtained information on benefits desired from transport, cycling attitudes and some aspects of personal experience not covered in the household survey. (It was not considered feasible to seek information on psychographics - the influence of psychographics can be measured indirectly via benefits desired from transport and cycling attitudes.) There are various behavioural theories that conceive in more detail than Figure 2 the relationship between attitudes and behaviour and these were drawn upon for the detailed design of the attitudes questionnaire.

The attitudes questionnaire contained the following sections:

- Section A sought to find out familiarity with local cycling facilities/services (3 statements), opinions about cycling in the neighbourhood where respondent lived (10 statements) and opinions about cycling in general (9 statements);
- Section B sought information about past cycling experience, current bicycle ownership, ability and confidence to cycle and future intention to cycle (11 questions); and
- Section C asked about attitudes to cycling, beliefs about cycling and benefits desired from transport for a local journey (17 attitude statements, 6 belief statements, 6 benefits statements).

Section B included questions on experience of cycling as a child, as it is hypothesised that those people that cycled as a child will be more likely to increase cycling as a result of the CCT programme. The respondent was also asked in Section B to classify themselves with regards to general cycling intention. This is

based on the Transtheoretical Model, or Stages of Change (SOC) Model[6], which suggests that change in behaviour occurs by moving through five stages of readiness from pre-contemplation through to contemplation, preparation, action and maintenance. Jones[7] used the SOC model but added two additional stages (a second pre-contemplation stage and a second preparation stage) in his application of the model to the design of a survey question and we have adopted his approach.

Section C has been designed to test the importance of attitudes, beliefs and benefits desired from transport for cycling behaviour. It is framed by asking the respondent to think about a local journey that they sometimes make. They are asked to respond to a set of statements (Likert-format) relating to cycling for a local journey (on a dry, sunny day). The 17 attitude statements represent constructs (beliefs, attitude, subjective norm, perceived behavioural control, self-identity, personal norm, habit, intention) from various theories of behaviour. The constructs that the statements represent are presented in Table 1. The six belief statements and six benefits desired from transport statements related to reducing travel time, improving health and fitness, relaxing experience, saving money, being impractical and being unsafe.

6 Prochaska, J.O. and DiClemente, C.C. (1982) Trans-theoretical therapy – toward a more integrative model of change. Psychotherapy: Theory, Research and Practice, 19(3), 276-288
7 Jones, T. (2008). The Role of National Cycle Network Traffic-Free Paths in Creating a Cycling Culture: The Case of NCN Route 5 Stafford. PhD thesis, Oxford Brookes University.

Table 1: Attitude Statements and Theoretical Constructs

Question reference number	Statement	Construct
SCC1	I plan to make a journey like this by bicycle within the next 4 weeks	Intention
SCC2	I would feel embarrassed to be on a bicycle for a journey like this	Self-identity
SCC3	It would be possible for me to make a journey like this by bicycle	Perceived behavioural control
SCC4	I feel it is my duty to the environment to use a bicycle for a journey like this	Personal norm
SCC5	Cycling is something I would do automatically for a journey like this	Habit
SCC6	Not using an environmentally friendly method of transport like a bicycle for a journey like this would be against my principles	Personal norm
SCC7	Most of my friends and family would use a bicycle for a journey like this	Subjective norm (descriptive)
SCC8	It would be good to make a journey like this by bicycle	Attitude
SCC9	I intend to make a journey like this by bicycle within the next 4 weeks	Intention
SCC10	It would be enjoyable to make a journey like this by bicycle	Attitude (affective)
SCC11	It is mostly up to me whether or not I make a journey like this by bicycle	Perceived behavioural control
SCC12	I am the type of person who would cycle for a journey like this	Self-identity
SCC13	In my neighbourhood I see many people cycling for journeys like this	Subjective norm (descriptive)
SCC14	If I used a bicycle, most of my friends and family would support this	Subjective norm (injunctive)
SCC15	It is expected of me that I would use a bicycle for making a journey like this	Subjective norm (injunctive)
SCC16	Making a journey like this by bicycle is something I would do without thinking	Habit
SCC17	It would be beneficial to make a journey like this by bicycle	Attitude (evaluative)

8. Baseline Survey Process

The baseline survey process for each survey stage is now described. This describes the procedures followed by the fieldwork team and the management procedures which applied.

All interviewers working on the study received a personal briefing and written instructions before starting work. The briefing covered research ethics and data protection requirements in relation to the survey. Under the Data Protection Act (DPA) 1988 the “data subject” must give “informed consent” for their personal data to be processed. This means survey respondents should be informed of:

- The identity of the data controller;

- The purposes for which the data will be processed; and
- Any further information which is necessary to enable fair processing of the data.

To meet these requirements interviewers were instructed to provide the following information to survey respondents:

- The name of the organisation collecting and processing the data;
- The purpose of the data collection;
- The organisation funding the work;
- How their address or name was selected;
- The broad types of information which will be collected; and
- The fact that participation is voluntary and that they can withdraw consent at any time.

Interviewers were instructed to use the words – "Your answers will be treated in strict confidence in accordance with the 1998 Data Protection Act" when collecting information.

The above information was included in a letter about the survey which was provided to all respondents in advance of each interview.

At the end of the survey process interviewers were instructed to provide respondents with 'thank you leaflets' which provided contact details should they have any questions about the research and more details on why they were selected for the research and how the data will be used. This leaflet provided details on how the information would be kept secure and their anonymity preserved.
The processes involved in conducting each stage of the survey are now described.

Stage 1: Household Interview Survey
All interviewers were issued with their interviewer allocations which were listed pre-selected addresses for each sampled OA. Interviewers then attempted interviews at these addresses. If the interviewers identified multiple households at a sampled address then a kish grid was used to randomly sample one of these households for interview.

A survey control form was used as the basis for recording details on contact with each household. This recorded details (timings, outcomes, etc.) of all visits and call backs to each address and the reasons for any non-response (e.g. empty/vacant building, completed all call backs, refused interview, etc.).

At the doorstep of each sampled household the interviewer first of all attempted to obtain permission to interview an adult member and permanent resident of the household. This was the chief wage earner or their spouse/partner in households with 2 or more adult members or another adult. The interviewer then established the number of adults (aged 16 plus) and the number of children (aged 5-15) who were permanent residents at each address. They then established if all household residents were at home and willing to take part and if so they proceeded with the interviews.

The first adult identified was then interviewed using the adult questionnaire with any other adults also interviewed using the adult questionnaire but excluding the questions on household information (these were only asked of the first adult as they applied to the household rather than to individuals). The child questionnaire applied for children aged 5-15.

If one or more household members was not present then the interviewer arranged a convenient time to call back to conduct the interviews, with any appointment dates recorded on the survey control form. Up to 4 call backs were made to each sampled address following the first visit. The call backs will be made on weekdays, weekends and at different times of the day to ensure that times were covered when both working and non-working people would be at home. Call back times were restricted to no later than 8PM.

If after all call backs and attempts to make appointments it was not possible to get all household members available at the same to complete the interview survey (and introduce the diary) then interviewers arranged for interviews and diary placement by proxy.

Stage 2: Household 'Travel Diary' survey
This involved the following procedures:

- Diaries were placed with all sampled households for Stage 2 following the Stage 1 interview;
- All household members in the sampled households were asked to complete the diary over a period of 7 days;
- Diary start dates were staggered by day and week over the survey period to ensure that days of the week in the survey period were not over or under-represented due to drop-off in recording of journeys through the diary period;
- A £5 incentive was offered for completing the dairy and was paid to each household member on diary completion;
- The interviewer explained to each household member how to complete the diary and specified the diary start date and arranged a date to return to collect the diary;
- A telephone call was made to households where possible 2-3 days before the end of the 7 day diary period to check that the diary was being completed and to help with any difficulties and confirm when intending to return to pick up the diary;
- At the end of the 7 day period interviewers visited each household to collect the diaries and to check their accuracy; and
- After collecting the diary interviewers requested completion of the self completion attitudes questionnaire (either to be completed as soon as possible and posted back in Freepost envelope or completed while the interviewer waited).

When there was a gap of 2 days or more between the interview and the diary start date, the interviewer made a reminder call to the household the day before they were due to complete the diary.

Diary respondents were provided with a full sized diary which was to be completed in full and returned to the interviewer on their return, as well as a pocket sized diary which they could use as a memory jogger. The pocket sized diary was a simplified, brief version of the full diary with space for notes, and intended to be carried around by the respondent for note-taking at the time of the journeys being made. This helped ensure more accurate recording of all trips made, and in particular the time and duration of trips.

9. Response Rates

In this section we describe the survey response rates beginning with the response rate to the Stage 1 interview household survey.

Stage 1: Interview Survey Response Rates

Table 2 shows the Stage 1 household survey response rate. The term 'deadwood' is used to describe properties where a survey response was not possible due to properties being vacant, derelict or not found at the address.

Table 2: Stage 1 Interview Survey Response Rate

Response Type (Household)	Households	Percentage
Issued addresses	31695	-
'Deadwood'	3482	11%
Eligible sample	28213	-
No response (refusals, all call backs etc)	11852	42%
One or more interviews completed with eligible household members	16343	58%

A complete set of interviews was received from 13,988 households (85% of households who participated in the survey). This means that all eligible adults and children living in these households completed the household interview.

Table 3 shows the survey response rate by town and the number of interviews achieved in each town.

Table 3: Stage 1 Interview Survey Response Rates by Town

CCT	Eligible Sample	Achieved Households	Response rate	Target Number of Interviews	Completed Interviews
Blackpool	2233	1320	59%	2520	2494
Bristol	2480	1367	55%	2520	2502
Cambridge	2286	1369	60%	2520	2566
Chester	2265	1408	62%	2520	2586
Colchester	2262	1250	55%	2520	2544
Leighton	2337	1276	55%	2520	2498
Shrewsbury	2466	1363	55%	2520	2562
Southend	2399	1395	58%	2520	2531
Southport	2321	1373	59%	2520	2505
Stoke	2417	1331	55%	2520	2690
Woking	2263	1270	56%	2520	2533
York	2483	1621	65%	2520	2760
Total	28213	16343	58%	30240	30771

Table 4 shows the number of interviews completed with adults (aged 16 plus) and children (aged 5-15) in each CCT.

Table 4: Number of Adult and Child Interviews by Town

CCT	Adults (aged 16 plus)	Children aged 5-15)	Total
Blackpool	2145	349	2494
Bristol	2156	346	2502
Cambridge	2220	346	2566
Chester	2256	330	2586
Colchester	2180	364	2544
Leighton	2189	309	2498
Shrewsbury	2181	381	2562
Southend	2152	379	2531
Southport	2156	349	2505
Stoke-on-Trent	2265	425	2690
Woking	2179	354	2533
York	2414	346	2760
Total	26493	4278	30771

In the analysis the base number of adult and child interviews shown above changes as the data was weighted to reflect the age and gender distribution in each town (see Appendix B).

Stage 2: Household 'Travel Diary' survey

Table 5 shows the response rate to the travel diary survey.

Table 5: Stage 2 Travel Diary Survey Response Rate

Response Type (Household)	Households	Percentage
Issued addresses	16,751	-
No response to Stage 1 interview survey ('deadwood', refusal etc)	8,519	51%
Eligible sample	8,232	-
No response (refusals, all call backs etc)	1,271	15%
One or more travel diaries completed by eligible household members	6,961	85%

Completed returns were received from all eligible respondents in 57% of participating households.

Table 6 shows the travel diary survey response rate by town and the number of completed diaries by town.

Table 6: Stage 2 Travel Diary Response Rates by Town

CCT	Eligible Sample	Achieved Households	Response rate	Target Number of Diaries	Completed Diaries
Blackpool	671	597	89%	864	854
Bristol	614	532	87%	864	843
Cambridge	647	567	88%	864	893
Chester	720	606	84%	864	899
Colchester	701	599	85%	864	867
Leighton	753	628	83%	864	858
Shrewsbury	694	574	83%	864	847
Southend	702	588	84%	864	813
Southport	709	602	85%	864	845
Stoke	599	453	76%	864	833
Woking	691	590	85%	864	823
York	731	625	85%	864	876
Total	8232	6961	85%	10368	10251

Table 7 shows the number of adult (aged 16 plus) and child (aged 5-15) diaries completed in each town and in total.

Table 7: Number of Adult and Child Travel Diaries by Town

CCT	Adults (aged 16 plus)	Children aged 5-15)	Total
Blackpool	725	129	854
Bristol	723	120	843
Cambridge	721	172	893
Chester	774	125	899
Colchester	735	132	867
Leighton	780	78	858
Shrewsbury	732	115	847
Southend	660	153	813
Southport	708	137	845
Stoke-on-Trent	643	190	833
Woking	740	83	823
York	774	102	876
Total	8715	1536	10251

Stage 3: Self-Completion Survey

In total, 8,245 adults in each town returned a self-completion attitude questionnaire. The self-completion questionnaires were placed with adults in all households where possible. In total 31% of adults returned self-completion questionnaires. Table 8 shows the returns by Town.

Table 8: Number of Self-Completion Questionnaires by Town

CCT	No of Returns
Blackpool	613
Bristol	787
Cambridge	923
Chester	906
Colchester	699
Leighton	440
Shrewsbury	772
Southend	697
Southport	558
Stoke-on-Trent	482
Woking	629
York	739
Total	8245

The response rate to the self-completion survey varied by town and this was closely related to cycling levels in each town as cyclists were more likely than non-cyclists to complete the questionnaire. This bias in the self-completion sample was adjusted for by weighting the survey data (see Appendix B).

8 Data Processing

The survey data was returned to AECOM offices by registered post on a weekly basis. Range, routing and logic checks were applied at the point of data entry and this was followed by frequency counts and cross-tabulations to further inspect the data for cleaning.

The following procedures were implemented to ensure that respondent anonymity and the confidentiality of their responses was guaranteed:

- All staff working on the project were instructed not share the survey data or any information about the research with any third party. This extended to ensuring that any emerging trends in the survey data were not communicated outside the study and client teams.
- Respondent anonymity was secured by detaching personal details (name and contact details) from every survey record following back checks and by only conducting aggregate level analysis of survey/data returns to ensure that no individuals were identified in any analysis and reporting.
- Application of rigorous procedures for storage and transfer of data were applied. The main procedures were storage of paper questionnaires in fire proof and locked cabinets, storage of electronic data on a secure server with each file password protected and transfer of data conducted by registered post with data files password protected.

The next stage following data processing was to weight the survey data and the weighting process is described in Appendix B.

Appendix B - Weighting

1. Background

Weighting of the survey sample was required so that it would adequately represent the population of interest. Weighting was required for the samples for each Cycling City and Town (CCT) so that each sample represented the population from which it was drawn. A further weighting step was required to gross the samples for each CCT to represent the programme population of 12 CCTs. An objective is to compare baseline survey results to National Travel Survey (NTS) results and therefore consideration was given to the weighting procedures applied by NTS.

In this note the weighting procedures are described that were applied to each sample (adult and child interview surveys, adult and child travel diaries, and adult self-completion questionnaires). The approach was developed following a detailed review of NTS weighting procedures and also those used for the Health Survey for England (HSE).

2. Adult and Child Interview Surveys

2.1 Review of Approach

Based on a detailed review of the weighting approach adopted for NTS and HSE the decision was made to apply two weighting steps (selection weighting and residual selection and non-response weighting) to the adult and child interview survey responses. The rationale for this decision is set out below.

Table 2.1 sets out weighting options that were considered.

Table 2.1: Weighting Options

Weighting issue	Weighting method	Method applied for NTS?
1. Multiple dwellings at selected addresses (selection weighting)	No. dwellings / No. dwellings selected	Yes
2. Differential response rates by different household types (household non-response weighting)	1 / Response rate for household type Household types could be defined by Primary Sampling Unit (PSU) characteristics	Yes
3. Differential response rates by different individual types (individual non-response weighting)	1 / Response rate for individual type Individual types could be defined by household size, age and sex	No (households removed where not all members participated in survey)
4. Post-stratification weights (coverage, residual selection and non-response weighting)	Comparing n-way table for sample with n-way table for population and weighting sample elements to match population elements (simple method) If marginal distributions available only for population then complex method required such as iterative proportional fitting, calibration weighting or Generalized Estimation System	Complex (based on age/sex and Government Office Region (GOR) and deriving household-based weights to match to distribution of individuals)

NTS also applies household weights to their interview sample for households where not all individuals completed interviews (these households are removed from analysis) and optionally for households which did not fully respond to survey questions (if these households are desired to be removed from analysis)[8].

For its general population sample the Health Survey for England (HSE) applies weights for multiple dwelling units. It additionally applies weights for *multiple households within dwelling units* (where a single dwelling is lived in by multiple households). An additional weight for multiple households within dwelling units was not considered for the CCT survey data as cases were extremely rare. The HSE applies calibration weighting is based on ONS mid-year population estimates for age/gender groups and Government Office Region (GOR)[9]. The ONS population estimates were adjusted to remove people aged 65 and over living in institutions (who were not eligible for HSE).

Weighting step 1 in Table 2 can be applied to the CCT interview sample based on information collected in the survey control forms about the total number of dwellings and the number of dwellings selected for interview[10]. This would generate a first household weight, w_{hs} (weighting for household selection).

Weighting step 2 requires information about both responding households and non-responding households. The only information available about non-responding households is general information about their local area (PSU characteristics such as ACORN category[11] or index of deprivation). Obtaining differential household response rates according to local area characteristics and calculating weights based on these would enable non-response due to socio-economic factors to be taken into account. This generates a second household weight, w_{hnr} (weighting for household non-response).

Unlike NTS, it has been decided in the CCT survey that the interview sample will include individuals from households where not all individuals completed interviews (14% of households). Hence the interview sample needed to be treated as a sample of individuals, rather than households. Differential response rates by different individual types (weighting step 3) could be calculated for the interview sample and used to derive a first individual weight, w_{inr} (weighting for individual non-response). This would require information about non-respondents as well as respondents. However, only limited information about non-respondents was available from the survey control form (i.e. whether they are adults or children) and hence it was decided not to apply this weighting step.

The final weighting step (4) is post-stratification weighting and seeks to match sample characteristics to population characteristics and address any coverage,

[8] Anderson, T., Christophersen, O., Pickering, K., Southwood, H. and Tipping, S. (2009). National Travel Survey 2008 Technical Report. Accessed at: http://webarchive.nationalarchives.gov.uk/+/http://www.dft.gov.uk/pgr/statistics/datatablespublications/personal/methodology/ntstechreports/ (11/01/11)

[9] Craig, R., Mindell, J. and Hirnai, V. (eds) (2009). Health Survey for England 2008: Volume 2 – Methods and Documentation. The Health and Social Care Information Centre. Accessed at http://www.ic.nhs.uk/pubs/hse08physicalactivity (11/01/11)

[10] This needs to be number of households selected and not surveyed

[11] ACORN is a geo-demographic information system categorising geographic areas into types (5 categories, 17 groups and 56 types) according to census and other information (lifestyle surveys). The latest classification is based on 2001 census and will not be updated until after the 2011 census. However, it is known that there is considerable stability in the ACORN classifications of geographical areas over time.

residual selection and non-response bias (both household and individual non-response). This should be conducted separately for the interview samples for each CCT and applied as an individual-based weight, w_{ips} (weighting for individuals through post-stratification). It is only useful to use population characteristics that are relatively current (such as ONS population estimates). This may mean that only age/gender characteristics of the population can used as the basis for matching and not employment status, car ownership, etc.

An alternative to weighting step 2 (w_{hnr}) for addressing socio-economic influences on survey non-response is to seek to match the sample distribution of a PSU characteristic (e.g. ACORN category, index of deprivation) to the population distribution of PSU characteristics (e.g. ACORN category, index of deprivation) as part of step 4 (for each CCT). Population matching would hence be sought for age/gender distribution and the PSU characteristic distribution. This would be more easily applied if an n-way table (of joint distributions) was available for age, gender and the selected PSU characteristic. If only marginal distributions were available a complex weighting method will be required. It was possible to obtain 3-way tables for joint distributions of age, gender and ACORN category for each CCT and therefore this option was selected instead of weighting steps 2 and 3.

In summary, weighing steps 1 and 4 were applied with step 4 seeking to match sample distributions of age/gender/ACORN for each CCT to population distributions for each CCT. Our approach to calculating these weights is now described.

2.2 Weighting for Multiple Dwellings

The sample source was the Postal Address File (PAF) which is the most comprehensive sample source available for sampling residential addresses. However, weighting was required to adjust for interviews conducted at any Multiple Dwelling Unit Addresses (MDUAs) which may have been listed as one address in the PAF. Although most addresses sampled contained a single dwelling unit, there were a small number of addresses which contained more than one dwelling unit. When this was the case the selected dwelling unit was chosen at random using a kish grid. This introduced a potential bias since properties containing more than one dwelling unit were under-represented in the sample. Therefore a dwelling selection weight was calculated that corrects for this.

Table 2.2 shows the number of multiple dwelling units in the survey sample. These formed a low proportion of the sample (0.5% in total). The weighting factor was calculated for the multiple dwellings by multiplying each of these dwellings by the number of actual dwelling units.

Table 2.2: Survey Households with Multiple Dwelling Units

Number of Dwelling Units at Address	Households (n)	Percentage (%)
1	16267	99.5%
2	28	0.5%
3	17	
4	11	
5	6	
6	6	
7	3	
8	5	

2.3 Individual Post-Stratification Weighting

This post-stratification weighting involved comparing 3-way tables for the interview sample with 3-way tables for the population in each CCT based on age/gender/ACORN and weighting the interview sample elements to match population elements. The population 3-way (joint distribution) table was derived from (i) ACORN 5-level groups based on 2009 census updates; and (ii) ONS 2009 mid-year population estimates for age/gender (adjusted to remove people aged 65 and over living in institutions).

The above approach was used to calculate weights for analysis of the interview survey data at CCT level. A further weighting factor was calculated for analysis at programme level and this is now described.

2.4 Population Weighting

Before analysing the adult and child survey data at programme level it was necessary to calculate an additional weighting factor to adjust for the population size in each of the target survey areas. This was required because broadly equal numbers of interviews were conducted in each survey area, whereas the survey areas themselves have different population levels. This is demonstrated in the tables below which show the population distribution across our survey sample in each study area and the actual population distribution across the study areas.

Table 2.3: Survey Sample Distribution across Study Areas

Cycle Town	Respondents (n)	Survey Sample Distribution (%)
Blackpool	2,494	8%
Bristol	2,502	8%
Cambridge	2,566	8%
Chester	2,586	8%
Colchester	2,544	8%
Leighton	2,498	8%
Shrewsbury	2,562	8%
Southend	2,531	8%
Southport	2,505	8%
Stoke	2,690	9%
Woking	2,533	8%
York	2,760	9%

Table 2.4: Population Distribution across Study Areas

Cycle Town	Population (n)	Population Distribution (%)
Blackpool	183,197	9%
Bristol	558,131	27%
Cambridge	184,115	9%
Chester	83,320	4%
Colchester	100,469	5%
Leighton	29,788	1%
Shrewsbury	84,556	4%
Southend	160,257	8%
Southport	113,118	6%
Stoke	302,049	15%
Woking	87,209	4%
York	147,974	7%

The weighting factor to adjust for the population distribution across study areas was calculated by dividing the population in each study area by the number of interviews in each study area.

In summary the following weights were calculated to apply to the interview data (the adult and child questionnaires):

- Town weight (TW). This was calculated by multiplying the multiple dwellings weight and post-stratification weight. The town weight is applied for all interview data analysis at CCT level.

- Programme weight (PW). This was calculated by multiplying the town weight (TW) by the population weight. The programme weight applies for all interview data analysis at programme level.

4. Travel Diary Weighting

The first stage in the travel diary weighting process was to make up a new data file from the main adult and child dataset which only contained the records for individuals who completed the 7 day travel diary. Weighting then involved two stages which are described below:

- Weighting for trip reporting drop-off
- Weighting for multiple dwellings and survey non-response

4.1 Weighting for Trip Reporting Drop-off

The first stage was to develop weighting procedures to adjust for trip reporting drop-off. This was required because NTS has observed a drop-off in the number of trips recorded by the 7 day travel diary as the survey week progresses. There is a reduction of trips recorded per day – number of trips drop from 2.3 on first day to 2.07 on seventh day. There are also differences in reporting drop-off by journey purpose.

For illustration Table 4.1 shows the drop off as observed from analysis of NTS data.

Table 4.1 Average number of journeys per day - 1st day compared with 7th day (from NTS)

Journey Purpose	1st day	7th day	% change
Commuting	0.4	0.37	-7.5
Education	0.13	0.12	-7.7
Escort/Education	0.08	0.08	0
Shop	0.45	0.37	-0.18
Other	0.48	0.41	-14.5
Social	0.53	0.48	-9.4

The weighting was developed only on the basis of day of survey as there were not found to be significant differences by journey purpose and day of week. Table 4.2 shows the number of trips made on each survey day. On the first day of the survey 28,787 trips were made. This drops to 22,987 on the seventh survey day. The weights required to adjust for this drop-off are also shown. The weight for the second survey day is 1.047 and this increases to 1.252 for the seventh survey day.

Table 4.2: Weighting to adjust for trip reporting drop-off

Day Number	Frequency	Percent	Weight
1	28787	15.9	1.000
2	27487	15.2	1.047
3	26633	14.7	1.081
4	25716	14.2	1.119

5	24814	13.7	1.160
6	24582	13.6	1.171
7	22987	12.7	1.252
Total	181006	100.0	

4.2 Weighting for Multiple Dwellings and Survey Non-Response

Weights were calculated for the diary sub-sample in the same way as applied for the interview survey. This involved:

- Multiple dwellings - weighting by multiplying each dwelling in the diary sample by the number of actual dwelling units.
- Post-stratification - comparing 3-way table for diary sample with 3-way table for population for each CCT based on age/gender/ACORN and weighting the diary sample elements to match population elements.
- Population – adjusting the population distribution across each study area by dividing the population in each study area by the number of completed travel diaries in each study area.

In summary, the following weights apply to the travel diary trip data:

- Town diary weight (TDW). This was calculated by multiplying the trip rate weight by the multiple dwellings weight and post-stratification weight. The town diary weight applies for all analysis of the diary sample at CCT level.

- Programme diary weight (PDW). This was calculated by multiplying the town diary weight (TDW) by the population weight. The programme diary weight applies for all analysis of the diary sample at programme level.

5. Self-Completion Survey

After taking part in the interview survey or after diary completion all adults (aged 16 and over) were asked to complete and return by post a self-completion, cycling attitudes questionnaire. The self-completion sample is all adults who completed the questionnaire.

The weighting steps for the self-completion sample were as follows:
1. Multiple dwellings – weighting by multiplying each dwelling in the self-completion sample by the number of actual dwelling units.
2. Post-stratification - comparing 3-way table for target self-completion sample (the adult interview survey sample) with 3-way table for the adult population (aged 16 plus) in each CCT based on age/gender/ACORN and weighting the target self-completion sample elements to match adult population elements.
3. Differential response rates – estimating logistic probability models of response to the self-completion survey across the CCTs based on characteristics of the target self-completion sample (the adult interview survey sample). Models were developed relating response to two variables: bicycle available for use; and cycling frequency. Weights were calculated as one divided by probabilities. After obtaining these weights the records of all adults who did not return the self-completion survey were removed.
4. Population – adjusting the population distribution across each study area by dividing the adult population in each study area by the number of completed self-completion questionnaires in each study area.

In summary the following weights apply to the self-completion data:

- Town self-completion weight (TSCW). This was calculated by multiplying the multiple dwellings weight, post-stratification weight and differential response rate weight. The town self-completion weight applies for all analysis of the self-completion sample at CCT level.

- Programme self-completion weight (PSCW). This was calculated by multiplying the town self-completion weight by the population weight. The programme self-completion weight applies for all analysis of the self-completion sample at programme level.

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Appendix C - EPIC Physical Activity Index

The method by which adult respondents to the survey were classified into one of four physical activity categories (inactive, moderately inactive, moderately active, active) is outlined below.

Questions about habitual physical activity were included in the household survey from the European Prospective Investigation into Cancer (EPIC) study. The EPIC questions ask about physical activity at work and the typical time spent per week in six different types of non-occupational physical activity (walking, cycling, gardening, housework, DIY and other physical exercise and sport).

A simple four-level index (known as the Cambridge EPIC index) has been developed to classify the physical activity of individuals (Wareham et al., 2003) based on the EPIC questions. It takes into account physical activity at work and the typical time spent per week cycling and in other physical exercise and sport (the two non-occupational types of physical activity regarded to be of vigorous intensity with a metabolic equivalent intensity (MET) value of at least 6).

Table 1: Physical Activity Classifications based on EPIC Data

	Cycling and other physical exercise (Average Hours per day)			
Work Activity	0	>=0 and <=0.5	>0.5 and <=1.0	>1.0
Sedentary or non worker	Inactive	Moderately Inactive	Moderately Active	Active
Standing	Moderately Inactive	Moderately Active	Active	Active
Manual	Moderately Active	Active	Active	Active
Heavy manual	Active	Active	Active	Active

Alternative indices have been developed based on the EPIC questions, including ones based on all six types of non-occupational physical activity. However, these have been found to provide weaker discrimination of objectively measured physical activity than the Cambridge EPIC index.

The validity of the Cambridge EPIC index has been demonstrated in two studies where the association between the index scores and objectively measured energy expenditure has been assessed (Wareham et al., 2003, and Cust et al., 2008). It has also been shown in another study (Khaw et al 2006) that the index is meaningful for public health, as it was found that compared to the inactive group the relative risk of all-cause mortality (after controlling for other factors) was decreased for people in the three other groups (0.83 for moderately inactive, 0.68 for moderately active and 0.68 for active).

References

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Appendix D - ACORN

ACORN is a geo-demographic segmentation of the UK's population supplied by CACI. It segments small neighbourhoods, postcodes, or consumer households into 5 Categories, 17 Groups and 56 Types. By analysing significant social factors and population behaviour, it provides precise information and an in-depth understanding of the different types of people in every part of the UK.

ACORN is built from a combination of government data and consumer research data. Over 400 variables are used to build ACORN and describe the different ACORN types. Of these variables, 30% were sourced from the Census. The remaining variables were derived from CACI's lifestyle databases and other sources. Where data about an individual has been used the individual has given permission for its use in marketing and analysis.

For the CCT evaluation, focus has been on the 5 key ACORN categories updated to 2009. These categories are summarised in Table 1.

Table 1: ACORN Category Summary

ACORN Category	Summary
Wealthy Achievers	These are established and at the top of the social ladder; they are healthy, wealthy and confident consumers
Urban Prosperity	These are well educated and mostly prosperous people living in major towns and cities
Comfortably Off	These are the home owning stable areas of modern Britain and they have few major financial worries
Moderate Means	These have modest lifestyles but are able to get by
Hard Pressed	These are people who are finding life the hardest and experiencing the most difficult social conditions

Below we provide a more detailed description of each ACORN category.

Category 1 Wealthy Achievers
These are some of the most successful and affluent people in the UK. They live in wealthy, high-status rural, semi-rural and suburban areas of the country. Middle-aged or older people predominate, with many empty nesters and wealthy retired. Some neighbourhoods contain large numbers of well-off families with school-age children, particularly the more suburban locations. These people live in large houses, which are usually detached with four or more bedrooms. Almost 90% are owner-occupiers, with half of those owning their home outright. They are very well educated and most are employed in managerial and professional occupations. Many own their own business. Car ownership is high, with many households running two or more cars. Incomes are high, as are levels of savings and investments. These people are established at the top of the social ladder; they are healthy, wealthy and confident consumers.

Category 2 Urban Prosperity
These are well-educated and mostly prosperous people living in our major towns and cities. They include both older wealthy people living in the most exclusive parts of

London and other cities, and highly educated younger professionals moving up the corporate ladder. This category also includes some well-educated but less-affluent individuals, such as students and graduates in their first jobs. The wealthier people tend to be in senior managerial or professional careers and live in large terraced or detached houses, with four or more bedrooms. Some of the younger professionals may be buying or renting flats. The less affluent will be privately renting. These people have a cosmopolitan outlook and enjoy their urban lifestyle. They like to eat out in restaurants, go to the theatre and cinema, and make the most of the culture and nightlife of the big city.

Category 3 Comfortably Off
This category contains much of middle-of-the-road Britain. Most people are comfortably off. They may not be wealthy, but they have few major financial worries. All life stages are represented in this category. Younger singles and couples, just starting out on their careers, are the dominant group in some areas. Other areas have mostly stable families and empty nesters, especially in suburban or semi-rural locations. Comfortably-off pensioners, living in retirement areas around the coast or in the countryside, form the other main group in this category. Most people own their own home, with owner-occupation exceeding 80%. Most houses are semi-detached or detached. Employment is in a mix of professional and managerial, clerical and skilled occupations. Educational qualifications tend to be in line with the national average. These are the home-owning, stable areas of modern Britain.

Category 4 Moderate Means
This category contains much of what used to be the industrial heartlands of Britain. Many people are still employed in traditional, blue-collar occupations. Others have become employed in service and retail jobs as the employment landscape has changed. In the better-off areas, incomes are in line with the national average and people have reasonable standards of living. However, in other areas, where levels of qualifications are low, incomes can fall below the national average. There are also some isolated pockets of unemployment and long-term illness. This category also includes some neighbourhoods with very high concentrations of Asian families on low incomes. Most housing is terraced, with two or three bedrooms, and largely owner-occupied. It includes many former council houses, bought by their tenants in the 1980s. Overall, the people in this category have modest lifestyles, but are able to get by.

Category 5 Hard-Pressed
This category contains the poorest areas of the UK. Unemployment is well above the national average. Levels of qualifications are low and those in work are likely to be employed in unskilled occupations. Household incomes are low and there are high levels of long-term illness in some areas. Housing is a mix of low-rise estates, with terraced and semi-detached houses, and purpose-built flats, including high-rise blocks. Properties tend to be small and there is much overcrowding. More than 50% of the housing is rented from the council or a housing association. There are a large number of single-adult households, including many single pensioners and lone parents. In some neighbourhoods, there are high numbers of black and Asian residents. These are the people who are finding life the hardest and experiencing the most difficult social conditions.

Appendix E - SEG classification

This Technical Appendix provides a summary of the key Socio-economic groups used in during the evaluation and analysis. The definitions have been taken from **'Occupation Groupings: A Job Dictionary**, (6ed, 2006), The Market Research Society.

Grade	Size (Approx % of total population)	Types of Employee
A	3	Professional people, very senior managers in business or commerce or top-level civil servants. Retired people, previously grade A, and their widows.
B	20	Middle management executives in large organisations, with appropriate qualifications. Principal officers in local government and civil service. Top management or owners of small business concerns, educational and service establishments. Retired people, previously grade B, and their widows.
C1	28	Junior management, owners of small establishments, and all others in non-manual positions. Jobs in this group have very varied responsibilities and educational requirements. Retired people, previously grade C1, and their widows.
C2	21	All skilled manual workers, and those manual workers with responsibility for other people. Retired people, previously grade C2, with pensions from their job. Widows, if receiving pensions from their late husband's job.
D	18	All semi-skilled and un-skilled manual workers, apprentices and trainees to skilled workers. Retired people, previously grade D, with pensions from their job. Widows, if receiving a pension from their late husband's job.