



Department
for Transport

A statistical consultation on the collection of short walk data in the National Travel Survey

July 2014

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Foreword from the Head of Profession for Statistics

The National Travel Survey (NTS) is one of the cornerstones of the Department for Transport's evidence base. It is essential for many of the Department's modelling tools and in supporting policy development. There are a wide range of users both within government and externally. Over the 48 years the NTS has been undertaken it has built up a strong reputation both nationally and internationally.

This statistical consultation about the collection of short walk data in the NTS is part of the Department's commitment to engage with users of DfT statistics. DfT continually reviews their data sources and methodology to ensure they are of the best possible quality and remain relevant, user engagement is essential to this process.

We welcome your views on the options proposed in this consultation including how any changes would affect your work. If there are other options you think we should consider I encourage you to submit these to us too.

June Bowman
Head of Profession for Statistics
Department for Transport

Executive summary

Introduction

1. The National Travel Survey (NTS) is a primary evidence source for forming travel policy within the Department for Transport. The Department is committed to maintaining the statistical quality of its official statistics especially the processes for producing statistics. The responses to this consultation will ensure that the NTS continues to be produced to a level of quality that meets users' needs.

Collection of short walk data

2. The NTS currently collects walking data via the seven-day travel diary. On days 1 to 6 of the travel diary, walks one mile and over are recorded by the respondent. Walks 50 yards or more and under one mile, which we define as 'short walks', are recorded on day 7 only to reduce the burden on the respondent.

Short walk experiment

3. In 2013, the NTS carried out an experiment looking at the timing for collection of short walk data in the seven-day travel diary to test whether there is a difference in recording short walks on day 1 of the diary instead of day 7.
4. The results of this experiment suggest there is a difference in the reporting of short walks when recorded on day 1 instead of day 7. This means that there is a need to consider changing the design of the NTS in regard to the collection of short walks data.

Proposals

5. This consultation sets out options, along with the advantages and disadvantages of each, for changing and improving the collection of short walks data. Comments are invited from a wide range of users including academics, charities and transport consultants.

Proposals in brief

Option 1a: Retain current day 7 collection methodology and re-run experiment in 5 years

Option 1b: Retain current day 7 collection methodology and re-run experiment in the 2015 survey

Option 2: Retain current day 7 collection methodology but develop weighting to correct for under-reporting.

Option 3: Change to a day 1 collection methodology.

Option 4: Change to a day 1 collection methodology and calculate a weight to uplift historic results

Option 5: Do not collect short walks on any day, i.e. stop day 7 collection.

How to respond

The consultation period began on 24 July 2014 and will run until 4 September 2014. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document or if you need alternative formats (Braille, audio CD, etc.) you can contact us using the contact details below.

Please send consultation responses to:

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When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

1. Background

National Travel Survey

1.1 The NTS is one of the Department for Transport's (DfT's) most essential and fundamental evidence sources. It has been run continuously since 1988, having been ran ad hoc during the 1970s and early 1980s. It is our primary source of data on:

- overall levels of personal travel in Britain, across all transport modes
- how and why people travel
- how travel patterns change over time
- how travel patterns vary by individual and household circumstances

1.2 NTS data is collected via two main sources. First, face to face interviews are carried out to collect information on the households, all individual members within the household and all vehicles to which they have access. Each household member is then asked to record details of all their trips over a seven-day period in a travel diary, allowing travel patterns to be linked with individual characteristics. The NTS covers travel by people in all age groups, including children.

Key uses of NTS walking data

1.3 The NTS is the most comprehensive source of national data on walking. The following are some of the main uses by the Department:

- monitoring trends in walking - sustainable travel policy
- DfT Business Plan impact indicator¹ - Proportion of urban trips under 5 miles taken by (i) walking or cycling (ii) public transport
- calibrating and maintaining the National Transport Model and the associated National Trip End Model dataset - tools

¹ Impact indicator <https://www.gov.uk/government/publications/proportion-of-urban-trips-under-5-miles-taken-by-i-walking-or-cycling-ii-public-transport>

used in developing and appraising business cases and forecasting demand

- 1.4** There are also a wide range of users of NTS walking data outside of the Department. Academics, students, consultants, charities, local authorities and other government departments use data from the published results tables, special data requests and raw data held at the UK Data Service.
- 1.5** NTS walking data allows users to:
- compare walking to other mode use
 - analyse the purpose of walking trips
 - understand the socio-demographic characteristics of people who make walking trips

The current design of the NTS diary collection

- 1.6** The NTS collects walking data via the seven-day travel diary. On days 1 to 6 of the travel diary, walks one mile and over are recorded by the respondent. Walks 50 yards or more and under one mile, which we define as 'short walks', are recorded on day 7 only to reduce the burden on the respondent. Walks less than 50 yards are not recorded on any day of the travel week.
- 1.7** The Department is already aware of under-reporting of trips by all modes (excluding short walks) in the NTS. By the end of the travel week, the NTS is subject to under-reporting such that the average number of trips recorded on day 7 is approximately 10% lower than on day 1. Appropriate weights are produced and applied to the travel data to reduce any biases from the under-reporting of trips during the course of the travel week².
- 1.8** Short walks are recorded on day 7 only. As a result, it is unknown whether short walks are affected by under-reporting in a similar way to that outlined above for other modes. Therefore no under-reporting weighting is currently applied to short walk data.

² Information about the NTS weighting methodology can be found in the NTS Technical Report, available at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/225735/nts2012-technical.pdf

2. Analysis

Short walk experiment

- 2.1 Since 2002, DfT has commissioned NatCen Social Research (NatCen) as the contractor for the NTS. NatCen carried out the short walk experiment between April and June 2013³.
- 2.2 The aim of the experiment was to test whether there is a difference in recording short walks on day 1 of the travel diary instead of day 7.
- 2.3 Specifically, the experiment measured the percentage of respondents that recorded short walks on day 1 and compared this with the percentage of respondents that recorded short walks on day 7.
- 2.4 Additional measurements for comparison between day 1 and day 7 included the average number of short walks per person and the effect on response rates.
- 2.5 A split sample approach was used in which approximately 25% or 1,000 respondents of the NTS quarter 2 sample (the experimental group) received travel diaries where short walks are recorded on day 1. The remainder of the sample (approximately 3,000 respondents) received the current design of the travel diary where short walks are recorded on day 7 (the control group).

Short walk experiment results

- 2.6 The results of the short walk experiment were both conclusive and unexpected. The experiment was designed with a sufficient sample size to detect a five percentage point change in the percentage of people recording a short walk on day 1 when compared with day 7. The observed change was larger than this.
- 2.7 Table 2.1 shows that for all people the percentage recording a short walk increased on day 1 when compared with day 7. On day 7, **22.8%** of people recorded a short walk compared with

³ The 2013 NTS surveyed residents of England only. In previous years the NTS also included residents of Wales and Scotland. Therefore, all analysis presented in this document is for England only.

30.8% on day 1, an increase of 8.0 percentage points. **This suggests there is a difference in the reporting of short walks when recorded on day 1 instead of day 7.**

Table 2.1: reporting of short walks by all people

All people	Day 1	Day 7
Percentage reporting a short walk	30.8%	22.8%
Average number of short walks per adult:	0.77	0.58

2.8 NTS respondents in the experimental day 1 group also recorded more short walks, **0.77** short walks per person compared with **0.58**, an increase of 31%.

Results for adults (aged 16+)

2.9 The change in the percentage of adults recording a short walk was significant.

2.10 When short walks were recorded on day 1, the percentage of adult respondents that recorded at least one short walk stage⁴ increased and by more than five percentage points. Table 2.2 shows that in the experimental group (day 1 recording), **29.1%** of adult respondents recorded at least one short walk stage compared with **20.3%** of adults in the control group (day 7 recording).

Table 2.2: reporting of short walks by adults aged 16+

All adults aged 16+	Day 1	Day 7
Percentage reporting a short walk	29.1%	20.3%
Average number of short walks per adult:	0.75	0.54

2.11 Adult NTS respondents in the experimental day 1 group were more likely to record a short walk and also recorded more short walks (**0.75** short walks per adult compared with **0.54** on day 7).

⁴ A trip consists of one or more stages. A walking stage can be a single stage walking trip or part of a multi-stage trip with other stage modes.

2.12 Table 2.3 shows these two results by trip purpose and it can be seen that personal business trips saw the largest difference in terms of reporting a short walk with a 7.4 percentage point increase.

Table 2.3: reporting of short walks by purpose (adults aged 16+)⁵			
	Day 1	Day 7	Day 7 to day 1 percentage point change (ppt)
Percentage reporting a short walk:			
Business	5.5%	4.3%	1.2
Shopping	7.1%	5.0%	2.1
Personal business	22.8%	15.3%	7.4
Social	6.3%	5.3%	1.1
Holiday	5.1%	2.6%	2.5
All adults (aged 16+)	29.1%	20.3%	8.8
	Day 1	Day 7	Day 7 to day 1 percentage change
Average number of short walks per adult:			
Business	0.11	0.09	18%
Shopping	0.08	0.06	28%
Personal business	0.41	0.28	50%
Social	0.08	0.07	22%
Holiday	0.06	0.04	60%
All adults (aged 16+)	0.75	0.54	38%

2.13 All trip purposes, where a substantial number of short walks were recorded, saw at least a 1 percentage point increase in the percentage of adults reporting a short walk when recorded on day 1.

2.14 There was only a small difference in the number of short walks reported for those that reported any: 2.58 on day 1 compared with 2.68 on day 7. Also, there was no change in the average distance of the short walks reported: 0.37 miles for both groups

⁵ Commuting, education and escort education are not shown because of the small number of short walks reported.

- 2.15** Therefore, we can conclude that the difference in reporting is at the person level. If someone reports short walks at all, they don't forget individual short walks at a different rate to those reporting on day 1. **The issue is that a larger proportion of people fail to report any short walks if collected on day 7.**
- 2.16** The increase in the reporting of short walks varied depending on whether the short walk was part of a multi-stage trip or a short walk only trip.
- 2.17** Table 2.4 shows that the increase in short walk reporting for adults was greater when the trip consisted of just a short walk rather than when part of a multi-stage trip (when a trip consists of more than one transport mode).
- 2.18** When short walks were part of a multi-stage trip, there was a very small change in the average number of short walks per adult from 0.20 on day 7 to 0.21 day 1.
- 2.19** This very small increase is likely due to the already identified drop-off in reporting during the travel week. **Therefore, the increase in the reporting of short walks predominantly comes from the increase in reporting of short walk only trips, which increased from 0.34 short walks per adult on day 7 to 0.54 on day 1.**

Table 2.4: reporting of short walks by whether short walk only or multi-stage trip (adults aged 16+)			
	Day 1	Day 7	Day 7 to day 1 percentage point change (ppt)
Percentage reporting a short walk:			
Short walk only	22.4%	14.4%	8.0
Multi-stage trip	8.6%	7.5%	1.1
All adults (aged 16+)	29.1%	20.3%	8.8
	Day 1	Day 7	Day 7 to day 1 percentage change
Average number of short walks per adult:			
Short walk only	0.54	0.34	59%
Multi-stage trip	0.21	0.20	4%
All adults (aged 16+)	0.75	0.54	38%

Results for children (aged 0-15)

2.20 The results for children depended on the age of the child with a split between children aged 0-4 years and those aged 5-15 years.

Table 2.5: reporting of short walks by age (children aged 0-15)			
	Day 1	Day 7	Day 7 to day 1 percentage point change (ppt)
Percentage reporting a short walk:			
Children: aged 0-4	41.5%	30.4%	11.0
Children: aged 5-15	34.2%	33.9%	0.4
All children (aged 0-15)	36.8%	32.7%	4.2
	Day 1	Day 7	Day 7 to day 1 percentage change
Average number of short walks per child:			
Children: aged 0-4	1.04	0.72	44%
Children: aged 5-15	0.71	0.76	-7%
All children (aged 0-15)	0.82	0.74	11%

2.21 For children aged four or younger, there was a similar increase in day 1 short walk reporting to that observed for adults. The percentage of children aged 0-4 who reported short walks on day 1 was 11.1 percentage points higher than the percentage that reported on day 7 (see table 2.5). The 'parent effect' where any short walks made by the child are likely to be made with the parent or guardian is the likely cause for this similarity.

2.22 For older children, aged 5 to 15, there was a marginal difference between the experimental and control groups with a 0.4 percentage point change in the reporting of short walks.

Other results: response rates

2.23 One potential disadvantage of recording short walks on day 1 rather than day 7 was that it could lead to a lower response rate. Recording short walks is possibly a more burdensome element of completing the travel diary due to their frequency.

Ultimately this is why short walks are recorded on only one out of a possible seven days of the travel diary.

2.24 For respondents in the experiment group, there was a possibility that starting the travel diary with the task of recording short walks could put them off continuing the diary for the entirety of the travel week. However, there was no observable difference in response across the two groups. The fully productive household response rate was **62.9%** when the short walk information was collected on day 7 and **62.5%** when it was collected on day 1.

3. Short walk under-reporting and impact on NTS results

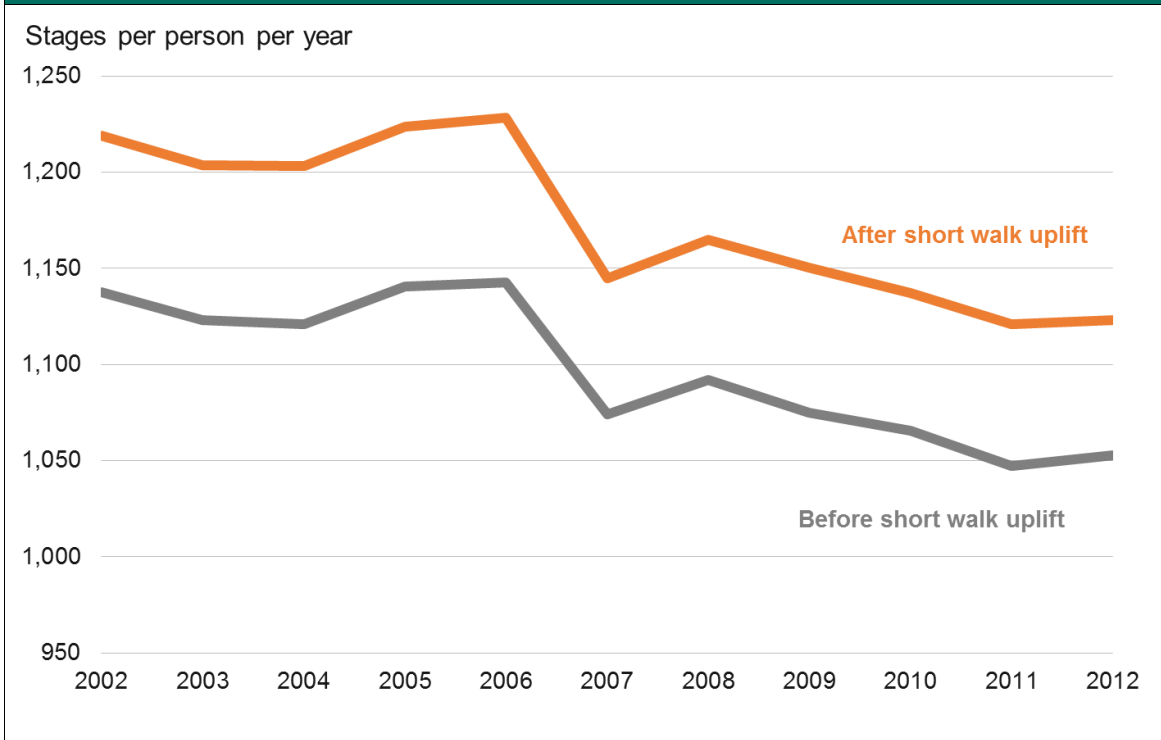
- 3.1** The results of the short walk experiment lead us to believe that historically the NTS has consistently under-reported the total number of walks. This means that the overall trip and stage rate per person is likely to be lower over time than may have been true.
- 3.2** We have not conducted any similar experiments previously but there is no evidence to suggest that the under-reporting of short walks has got worse over time. Therefore, we believe the observed falling trend in walking trips is a real finding.
- 3.3** In 2012 (the latest published NTS data), the average number of walking stages was 289 per person per year, of which, 74% were short walks. Overall, 20% of all stages are short walks.
- 3.4** By collecting short walk data on day 1 instead of day 7, the short walk experiment shows:
- 59% increase in adult short walk only stages
 - 4% increase in adult short walks as part of multi-stage trips
 - 11% increase in children's short walk stages
- 3.5** Table 3.1 shows the estimated effect of applying these short walk adjustments to NTS data between 2002 and 2012. This 'uplift' gives an indication of how historic NTS data has been affected by short walk under-reporting.

Table 3.1: impact of short walk uplift on NTS data: England, 2002 and 2012

	Stages per person per year		Percentage of all stages (2012)
	2002	2012	
Short walks (under 1 mile)			
Before short walk uplift	223	214	20%
After short walk uplift	304	284	25%
All walks			
Before short walk uplift	304	289	27%
After short walk uplift	386	359	32%
All modes			
Before short walk uplift	1,138	1,053	100%
After short walk uplift	1,219	1,123	100%

- 3.6** The short walk uplift assumes that the short walk experiment results are representative of under-reporting over time. Therefore, the 'uplifted' results are for illustrative purposes only and should be used as an indication of the effect of short walk under-reporting.
- 3.7** However, as a broad indication, table 3.1 shows that the effect of the short walk uplift would be to increase the average number of walking stages per person per year in 2012 from 289 to 359, an increase of 24%. As a result, walking would account for 32% of all stages compared with 27% before the uplift. Overall, the effect of the short walk uplift is to increase all stages travelled per person per year in 2012 by 7% (see figure 3.1).

Figure 3.1: estimated effect of short walk under-reporting on average number of stages for all modes: England, 2002 to 2012



- 3.8** If all walks (both short and those over one mile) are excluded and therefore no uplift is necessary, the average number of stages per person per year in 2012 reduces from 1,053 to 764. The trend in the number of non-walking stages is maintained.
- 3.9** Paragraphs 3.1 to 3.8 above outline the impact on short walk stages. The impact of under-reporting of short walks on trip rates cannot easily be estimated. However, as paragraph 2.19 states, we do know that the under-reporting of short walks is predominantly for short walk only trips. In 2012, short walk stages made up 74% of all walking stages and of these 68% were single stage trips, i.e. meaning the *main mode* for the trip would be walking. This equates to half of all short walk stages also being short walk trips and therefore affected by under reporting. The other half are part of multi-mode trips where another mode of transport would be classified as the main mode and therefore the historic trip rate result for these would be unaffected.

4. The proposals

- 4.1** Given the magnitude of the observed differences in collecting short walk data on day 1 compared with day 7 we have explored some options to improve the quality of NTS walking data which would be implemented at the start of the 2015 survey year.
- 4.2** **We would welcome users' views on the options below. In addition, if users have other options they think we should consider then we would welcome these too.**

Proposals in brief

Option 1a: Retain current day 7 collection methodology and re-run experiment in 5 years

Option 1b: Retain current day 7 collection methodology and re-run experiment in the 2015 survey

Option 2: Retain current day 7 collection methodology but develop weighting to correct for under-reporting.

Option 3: Change to a day 1 collection methodology.

Option 4: Change to a day 1 collection methodology and calculate a weight to uplift historic results

Option 5: Do not collect short walks on any day, i.e. stop day 7 collection.

Option 1a

Retain current day 7 collection methodology. Acknowledge under-reporting issue in all future published results. Re-run experiment in 5 years to assess if under reporting level changed

Advantages

- Continuity of time series maintained
- No additional resource needed in the short term
- No change to processing methods needed

Disadvantages

- Unsatisfactory to continue a method with known flaws
- Difficult to ensure users are always aware of the caveat of under-reporting when using NTS analysis and results
- Cost of re-running experiment in future

Option 1b

Retain current day 7 collection methodology. Acknowledge possible under-reporting issue in all future published results but re-run similar experiment next year (2015 survey) to validate original experiment results.

Advantages

- Continuity of time series maintained (at least until 2016 survey)
- No change to processing methods needed (at least until 2017 survey)

Disadvantages

- Effectively delaying the decision to change by another year. Unsatisfactory to continue a method with known flaws
- Difficult to ensure users are always aware of the caveat of under reporting when using NTS analysis and results
- Cost of re-running experiment in 2015. Unlikely to be value for money as original experiment was designed to identify significant changes

Option 2

Retain current day 7 collection methodology but develop weighting to correct for under reporting.

The best way of developing a weight would be to do a 50/50 split in one survey year to get precise estimates for collecting on day 1 and day 7. The experiment data could be used to develop a weight, i.e. assume the ratio from the experiment and apply that to the total number of short walks, however this would not be as precise as a new 50/50 collection.

Advantages

- Experiment data already collected

Disadvantages

- Would need to repeat experiment regularly to get updated data for accurate weighting - cost implication which is unlikely to be value for money
- A 50/50 split experiment would need significant data processing changes - contractor resource and cost implications
- Historic data could be weighted incorrectly as no experiment data for earlier years
- Applying historic uplift has resource implications

Option 3

Change to a day 1 collection methodology.

Advantages

- Future results would be accurate
- No impact on response rates by changing
- High level walking trends should still be identifiable

Disadvantages

- Discontinuity in time series of results from 2015
- Changes needed to data processing scripts (some resource needed but manageable)

Option 4

Change to a day 1 collection methodology and calculate a weight to uplift historic results (see section 3 for example).

Advantages

- Future results would be accurate
- No impact on response rates by changing
- Time series may be maintained if weighting correct

Disadvantages

- Difficult to calculate an accurate weight based on one set of experiment results. It would be subject to error; is only strictly valid for that year of the survey (2013); as it is based on an experiment it might not reflect what actually would happen if the methodology changed

- Applying historic uplift has resource implications

Option 5

Do not collect short walks on any day, i.e. stop day 7 collection.

Advantages

- Reduces burden on respondent
- No under-reporting issue
- Could remove short walk data from historic results so comparable

Disadvantages

- Lose around 75% of walking data
- No other data source monitors walking compared to other modes (Active People Survey has walking and cycling data)
- Resources needed to revise historic results tables

What will happen next

A summary of responses, including the next steps, will be published within three months of the consultation closing. Paper copies will be available on request.

If you have questions about this consultation please contact:

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Further background information about the National Travel Survey can be found at <https://www.gov.uk/government/collections/national-travel-survey-statistics>

Annex A: Consultation questions

We welcome any feedback on the options proposed in this consultation, or other suggestions to improve short walk data in the NTS. The questions below are intended as a guide if you wish to structure your response, but we are happy to receive more “open” responses as well.

Question 1

What use do you make of the walking data in the NTS at present?

Question 2

Which, if any, of the proposed options presented in section 4 do you think is the best for the NTS to implement from 2015 and why?

Question 3

Do you have any other suggestions on how to improve the collection of short walk data in the NTS?

Annex B: Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. Further information is available at

<https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process please contact:

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