Transport for London

Highway asset management survey - carriageways

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MAYOR OF LONDON

Transport for London

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Executive Summary

Introduction

The Phase 2 research was designed to gather customer minimum and preferred levels of service with respect to specific carriageway condition defects.

The survey sample was designed to be a representative of TLRN users and comprised 400 drivers (of cars, LGVs, HGVs, P2Ws and buses) and 200 cyclists.

Method

A face-to-face Computer Aided Personal Interview (CAPI) approach using a hall test method supplemented by face-to-face at home/in office interviews was used. The locations were chosen to broadly represent the TLRN by location (one each in North, West, South and East London and two in inner London).

The research asked respondents to answer the following two questions for each of eight condition defects:

a) At what level of defect would you prefer TfL to intervene?
b) At what level do you think TfL must intervene?

For each defect respondents were shown four images showing 20%, 40%, 60% and 80% levels of condition defect.

The condition defects covered were:

- Rutting
- Fretting
- Cracking
- Flooding
- Ironworks
- Fatting
- Subsidence based on area
- Subsidence based on depths

Findings

- On balance, drivers rated the overall condition of the Red Route Network in London as good whereas cyclists rated the overall condition as poor – infrequent users rated the condition better than frequent users

- 88% of drivers and 89% of cyclists thought the quality of the TLRN was important
  - the worse the condition of the TLRN the more important the quality
  - the more frequent the usage the more important the quality

- The condition defects which required intervention at the lowest percentage defect level for drivers were fretting and subsidence (both area and depth). For cyclists they were fretting and subsidence – depth.

- There was a gap of about 15% between the mean defect level at which respondents would prefer TfL to intervene and at which respondents said TfL must intervene

- The research showed that carriageway users were able to clearly show their preferences with respect to minimum and preferred levels of service with respect to specific carriageway condition defects

- In terms of priorities for improvements, the top three for drivers were ironworks, subsidence – depth and fretting; for cyclists the top three were subsidence – depth, ironworks and subsidence – area.

1. INTRODUCTION

1.1 Background

This report is on Phase 2 of the Highway Asset Management Customer Survey, a follow up study to a large stated preference (SP) survey Accent undertook for TfL in 2008 and 2009 with a final report prepared in April 2009[1].

TfL's Asset Investment Team of the Highways Asset Management within RNM used the findings from that research (Phase 1) but found the following limitations in its usefulness for their purposes:

- some of the defects measured (ie ironwork and potholes) are not in UKPMS. This means that the results could not be linked to TfL's value management process
- the survey did not address carriageway length so that it was not possible to assess the degree or overall number of defects for a given length of carriageway
- the survey looked at overall carriageway condition, not individual defects. Although, the research outputs included a list of individual defects, these were measured alongside others and there may have been interactions and/or correlations between the different defect types.

This study (Phase 2) focuses on individual defects and, therefore, the findings will be able to be mapped back to the engineering ratings and a comparison between the two methods can be carried out leading to trade-offs in funding and scheme selection.

1.2 Objectives

The Phase 2 research was designed to gather customer minimum and preferred levels of service with respect to specific carriageway condition defects.

The questions TfL's Highways Asset Investment Team required to be answered for carriageways were:

- What is the preferred condition?
- What is the minimum acceptable condition?

The resulting minimum and preferred levels of service for each condition defect measured would be used to create a series of rating curves for each defect.

This would allow the TfL's Highways Asset Investment team to investigate minimum and preferred funding requirements and to set maintenance targets. In addition, it would enable the development of a planning and prioritisation method for capital works where customer requirements influence scheme selection.

[1] Road Network Management SP Survey – Customers' Priorities for Maintenance Service Levels, Final Report, April 2009

2. METHODOLOGY

2.1 Introduction

The scope of the Phase 2 research is the Transport for London Road Network (TLRN). As the research dealt with customers' preferences for levels of service over the whole network the research considered all TLRN carriageways, not just specific parts of the network as was the case in the Phase 1 research. This research does not cover footways.

The Phase 2 research was designed to gather customer minimum and preferred levels of service with respect to specific carriageway condition defects.

There was a two part approach to Phase 2:

- The first part was to develop and test the method (see Section 2.2)
- The second part was to undertake a quantitative survey of carriageway users (see Section 2.3).

2.2 Phase 2 Method – Part A

This part of the research programme involved developing the methodology and was undertaken by TfL's Highways Asset Investment Team and Accent.

The key aspects of this phase included:

- Defining the condition defects to be measured and their levels
- Developing show material to describe these defects
- Designing the sample: type, numbers and locations
- Developing the survey instrument
- Piloting the survey instrument
- Reviewing the research outputs.

A report on the pilot is included as Appendix C.

2.3 Phase 2 Method – Part B

Introduction

The research focused on defects for which RNM currently undertakes DVI and SCANNER surveys as well as defects that RNM could easily incorporate in the DVI survey and that have an impact on some or all customer groups. The levels were based on severity and length.

Method

The target sample was carriageway users, that is drivers of cars, LGVs, HGVs, P2Ws, buses and cyclists.

A face-to-face CAPI approach using a hall test method supplemented by face-to-face at home/in office interviews for some of the more difficult to achieve respondent types

such as LGV, HGV, bus and P2W drivers. This approach allowed respondents to give careful consideration to the show materials which were an important element of the study.

Hall venues were selected in suitable locations and potential respondents were approached outside the venue. A recruitment questionnaire was used to ensure respondents matched the quota targets (see Appendix B). An incentive of £5 was offered to each participant to participate in the interview.

Sample

The target sample size was 400 drivers and 200 cyclists.

The survey sample was designed to be a representative of TLRN users, so that the results would be a fair reflection of the needs of the users.

TfL provided a breakdown of the usage by mode based on their knowledge of internal statistics of the usage of the TLRN. The driver sample was based on this data.

- 304 car drivers (76%)
- 16 P2W drivers (4%)
- 16 HGV drivers (4%)
- 8 bus drivers (2%)
- 56 LGV drivers (14%)

Quotas were set for car and P2W drivers and cyclist by gender and age as shown below:

Mode	16-30	31-45	46-60	61+
Car	18	40	26	16
P2W	27	40	20	13
Cycle	29	45	19	6

Male	Female
56	44
66	34
69	31

Dates

Fieldwork took place between 21 June and 20 July 2010.

Locations

The locations were chosen to broadly represent the TLRN by location (one each in North, West, South and East London and two in inner London).

- A10 Cambridge Road
- A11 Mile End Road
- A4 Chiswick
- A23 Kennington Road
- A2/A205 Eltham
- A23 Thornton Road.

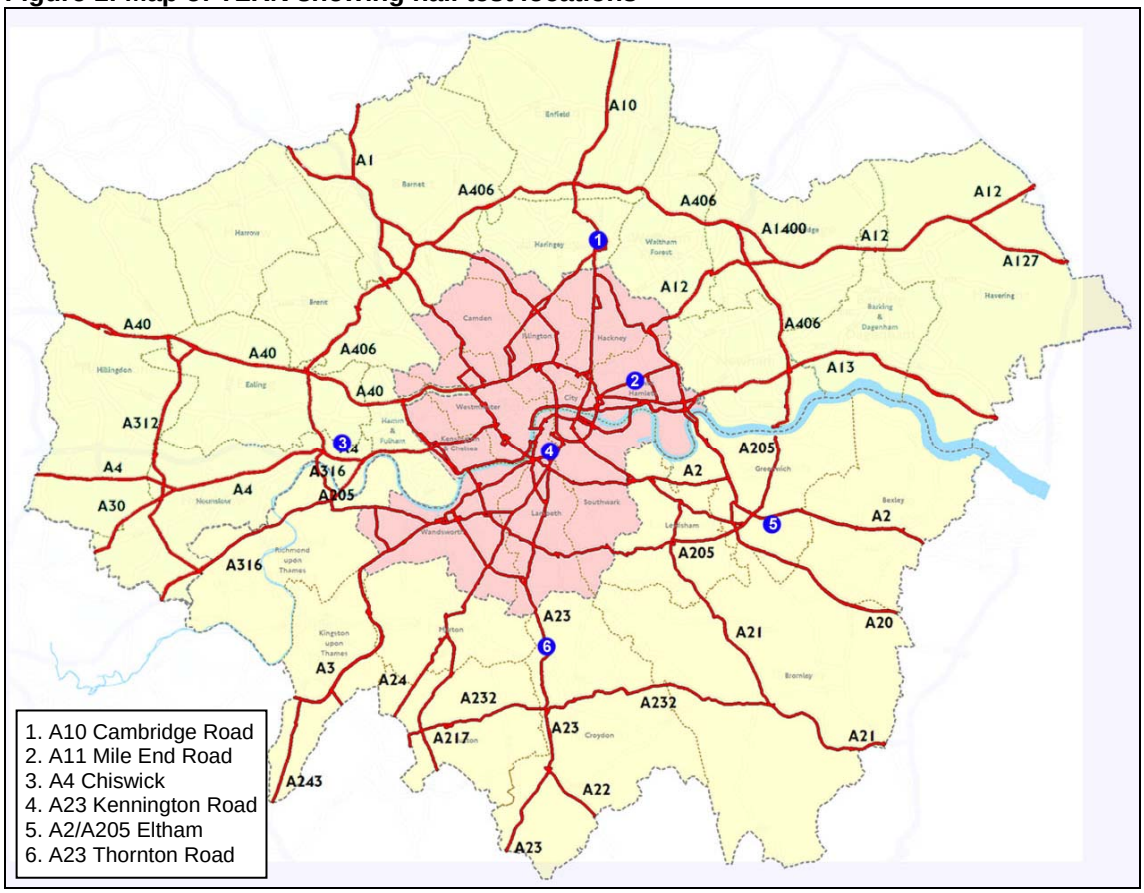
The hall test venues, selected in locations which were amenable for recruiting TLRN carriageway users, were:

A10 Cambridge Road	Bernie Grant Arts Centre Town Hall Approach Road

	Tottenham N15 4RX
A11 Mile End Road	The White Hart Pub 1-3 Mile End Road E1 4TP
A4 Chiswick	Chiswick Town Hall Heathfield Terrace Turnham Green Chiswick W4 4JN
A23 Kennington Road	The Tommyfield 185 Kennington Lane SE11 4EZ
A2/A205 Eltham	St Mary's Community Complex Association 180 High Street Eltham SE9 1BJ
A23 Thornton Road	The Horseshoe Pub 745 London Road CR7 6AW

These are shown on the map below.

Figure 1: Map of TLRN showing hall test locations



Questionnaire

The questionnaire covered the following topic areas:

- Vehicle type
- Frequency of use of TLRN carriageways

- Purpose of use
- Rating of carriageway eight carriageway defects:
  - Minimum acceptable level
  - Preferred level
- Diagnostic questions
- Respondent characteristics.

The main part of the questionnaire concerns the following eight condition defects:

- **Rutting** (where part of the carriageway becomes grooved)
- **Fretting** (where the carriageway surface breaks up)
- **Cracking** (cracks on the carriageway surface)
- **Flooding** (where parts of the carriageway remain under water after rain)
- **Ironworks** (where ironwork is raised or sunken)
- **Fatting** (where there is poor surface texture)
- **Subsidence** (where part of the carriageway subsides to a lower level)
  - Based on area
  - Based on depth

The order these are shown is randomised.

For each condition defects there were three screens:

- an introduction screen that describes the defect and what we are asking
- a screen with four large images showing the defects at different percentages
- a question screen with the same images at a reduced size and the following two questions:
  a) At what level of defect would you prefer TfL to intervene?
  b) At what level do you think TfL must intervene?

To ensure that respondents understand the task there was an example set of these questions using ‘rutting’ as an example.

A paper copy of the CAPI questionnaire is included as Appendix A.

3. FINDINGS – DRIVERS

3.1 Introduction

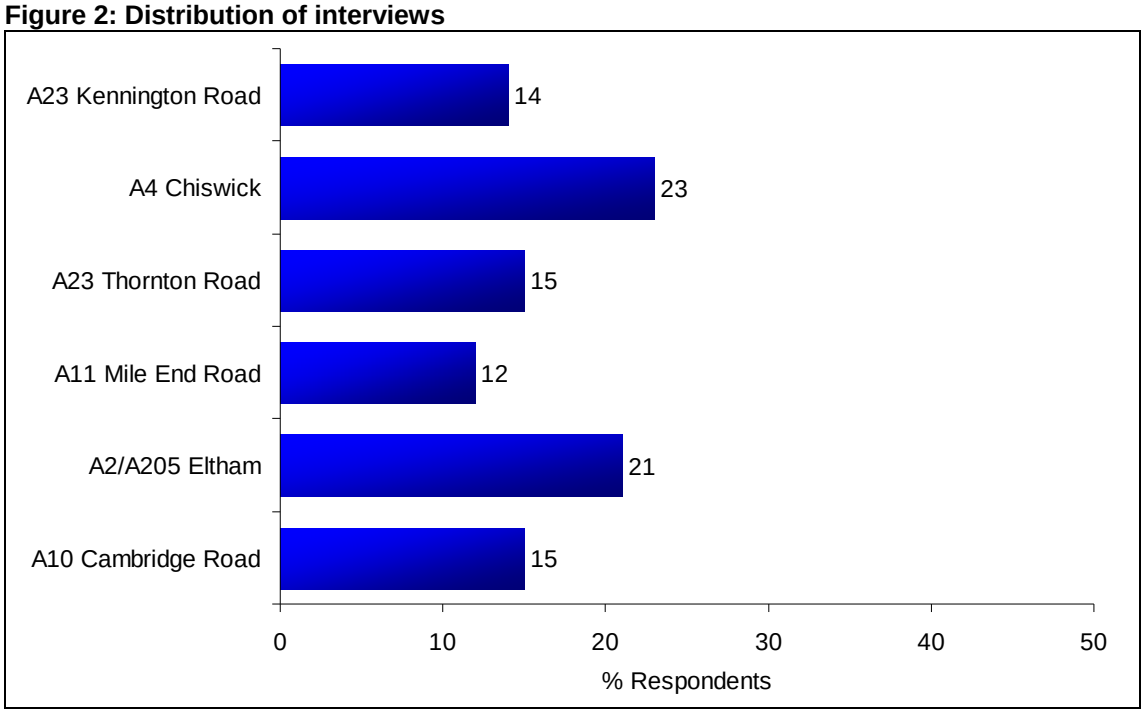
This chapter presents the findings from the Phase 2 main survey for drivers.

A target of 400 interviews with drivers was set and 407 achieved

	target	achieved
Car	304	306
P2W	16	19
HGV	16	16
Bus	8	8
LGV	56	58
Totals	**400**	**407**

The distribution of interviews by area is shown below.

Figure 2: Distribution of interviews



Base: 407 drivers

There were minimum age and gender quotas for car and P2W drivers.

- Car drivers:

	Age	**minimum target**	**achieved**
–	18-30	15%	18%
–	31-45	35%	34%
–	46-60	20%	32%
–	61+	10%	15%
–	**Gender**		
–	Female	40%	45%

- P2W drivers:
  - **Age** **minimum target** **achieved**
  - 18-30 23% 37%
  - 31-45 35% 32%
  - 46-60 15% 26%
  - 61+ - 5%
  - **Gender**
  - Female 29% 21%

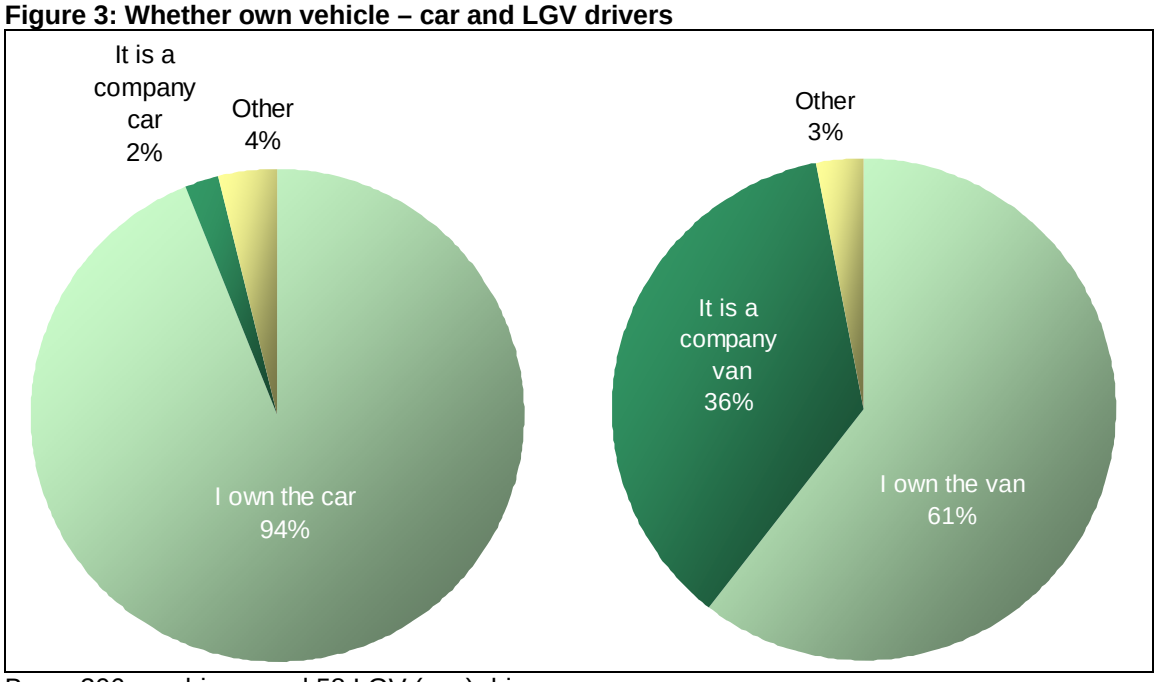
Please note that the age quota breaks do not exactly match the age breaks within the CAPI questionnaire.

3.2 Car/LGV Ownership

Car and LGV drivers were asked if they owned their vehicle or of it was a company vehicle.

Almost all car drivers (94%) and 60% of LGV drivers owned their vehicle.

Figure 3: Whether own vehicle – car and LGV drivers



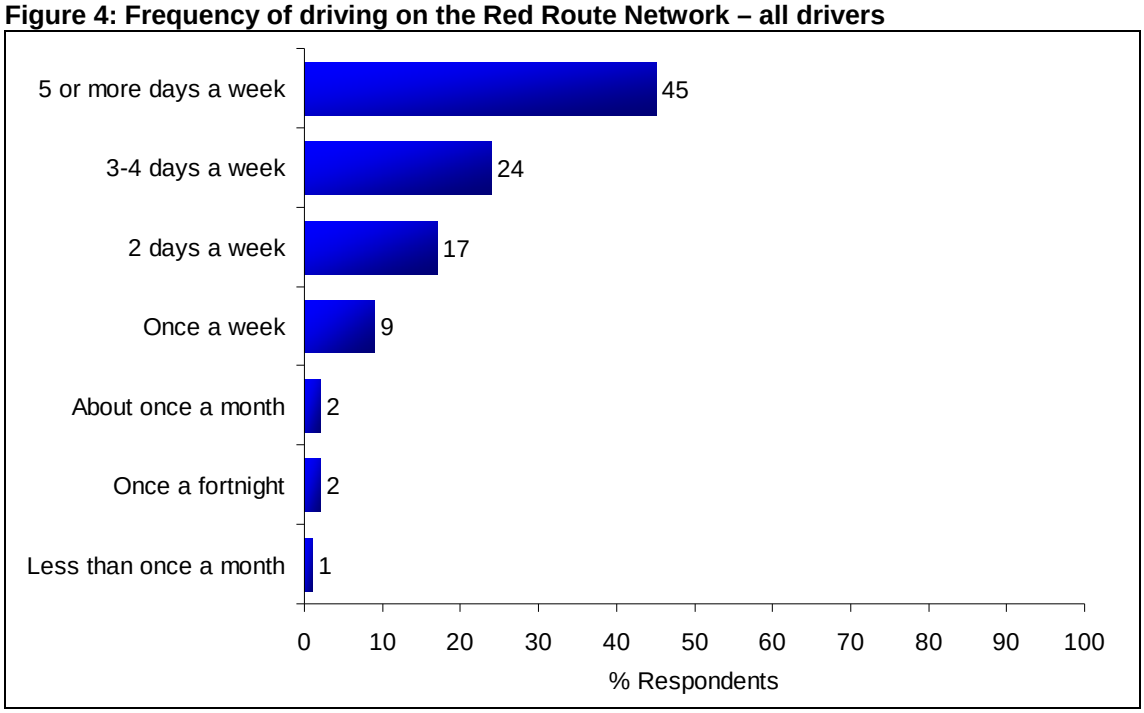
Base: 306 car drivers and 58 LGV (van) drivers

3.3 TLRN Use

Drivers were shown a map of the Red Route Network and asked how often they drove on the Red Route Network.

Forty five per cent of the sample drove on the Red Route Network five days a week or more with a further 50% doing so between one and four times a week.

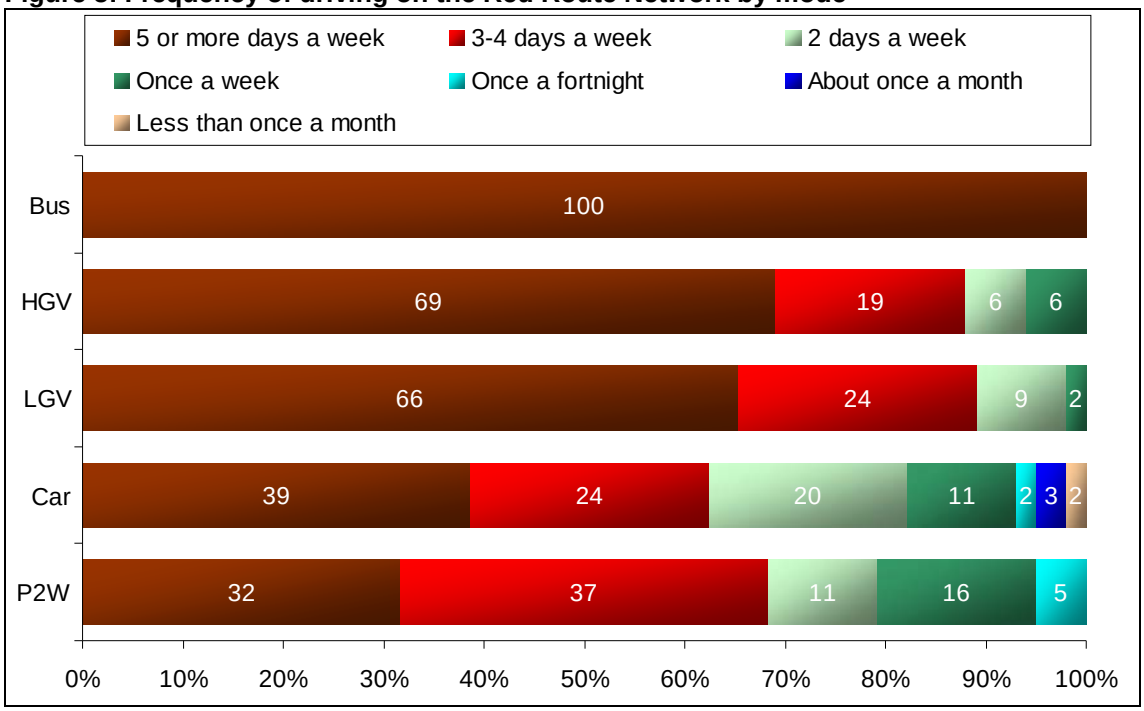
Figure 4: Frequency of driving on the Red Route Network – all drivers



Base: 407 drivers

Analysis by mode shows that bus, HGV and LGV drivers were much more frequent drivers on the Red Route Network than car and P2W drivers and this correlates with the use of bus, HGV and LGV in the course of work.

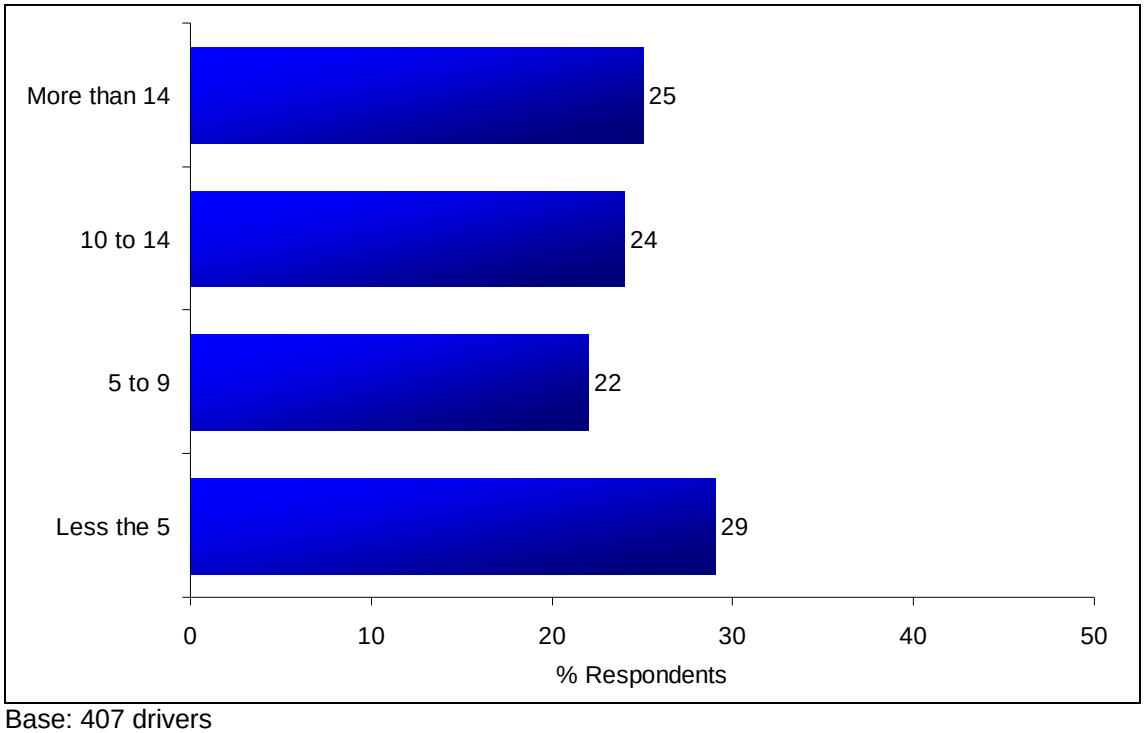
Figure 5: Frequency of driving on the Red Route Network by mode



Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

Drivers were asked how many times they drove on the Red Route Network on average in a week. There was a wide distribution with 29% driving on it less than five times a week on one end of the scale and 25% driving on it more than 14 times a week at the other end of the scale.

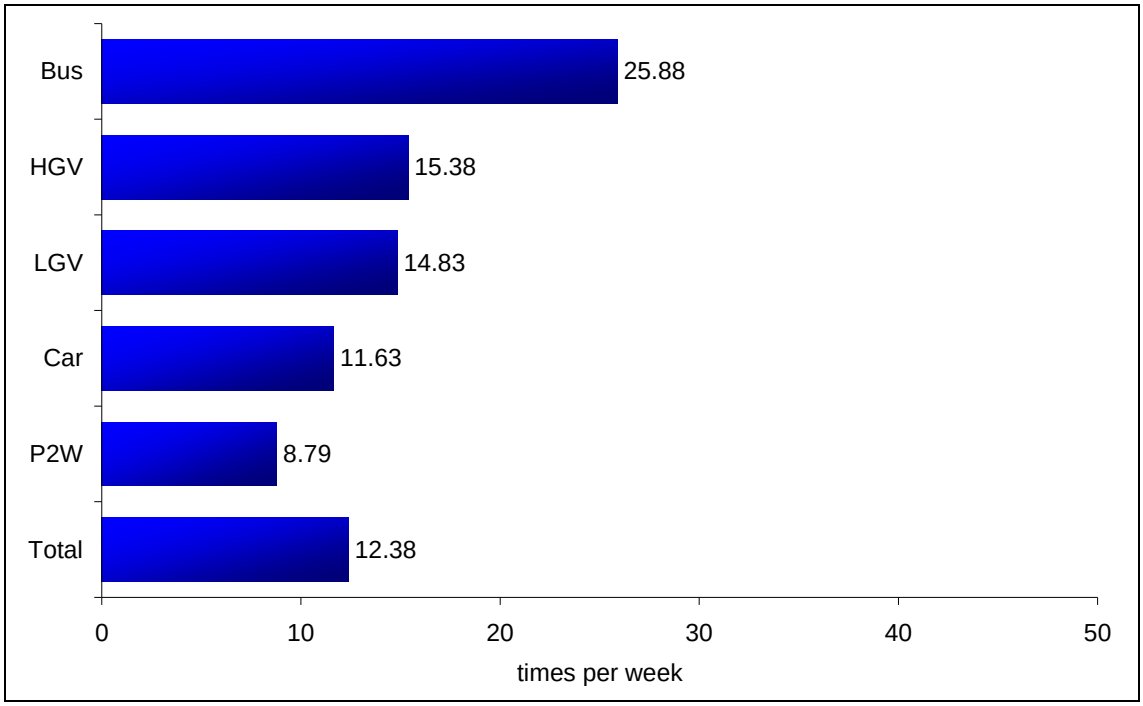
Figure 6: Number of times drive on the Red Route Network on average in a week – all drivers



Base: 407 drivers

The average number of times was 12.38 per week (or a little less than twice a day). The distribution of average times by mode is shown in Figure 7. Bus drivers were by far the most frequent users of the Red Route Network with an average of 25.88 times per week. HGV and LGV drivers were the next two most frequent users of the Red Route Network.

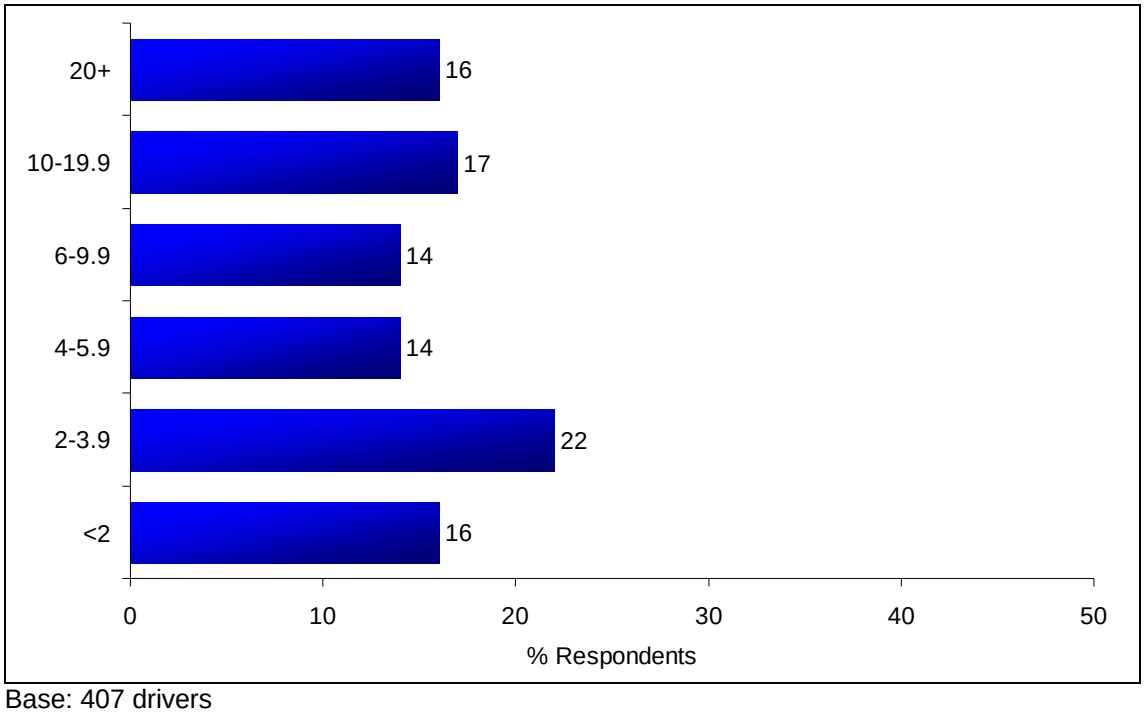
Figure 7: Mean number of times drive on the Red Route Network on average in a week by mode



Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

The number of hours that were driven on the Red Route Network on average in a week was probed. There was a wide distribution with 16% driving less than two hours a week on one end of the scale, and the same proportion driving 20+ hours a week at the other end of the scale.

Figure 8: Number of hours drive on the Red Route Network on average in a week – all drivers

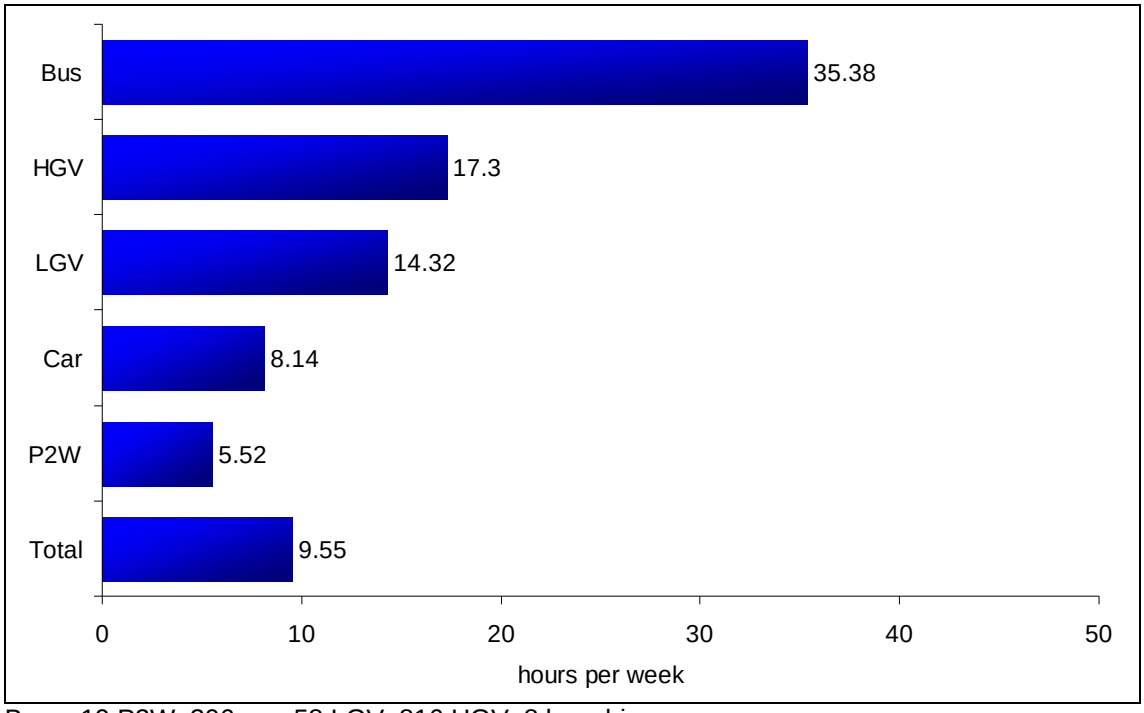


Base: 407 drivers

The average number of hours driven on the Red Route Network in a week was 9 hours 47 minutes. The distribution of average time by mode is shown in Figure 9. As with the frequency of trips and the number of times driven on the Red Route Network, bus drivers were by far the heaviest users of the Red Route Network with an average of 35 hours per week.

HGV and LGV drivers were the next two heaviest users of the Red Route Network.

Figure 9: Mean number of hours drive on the Red Route Network on average in a week by mode



Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

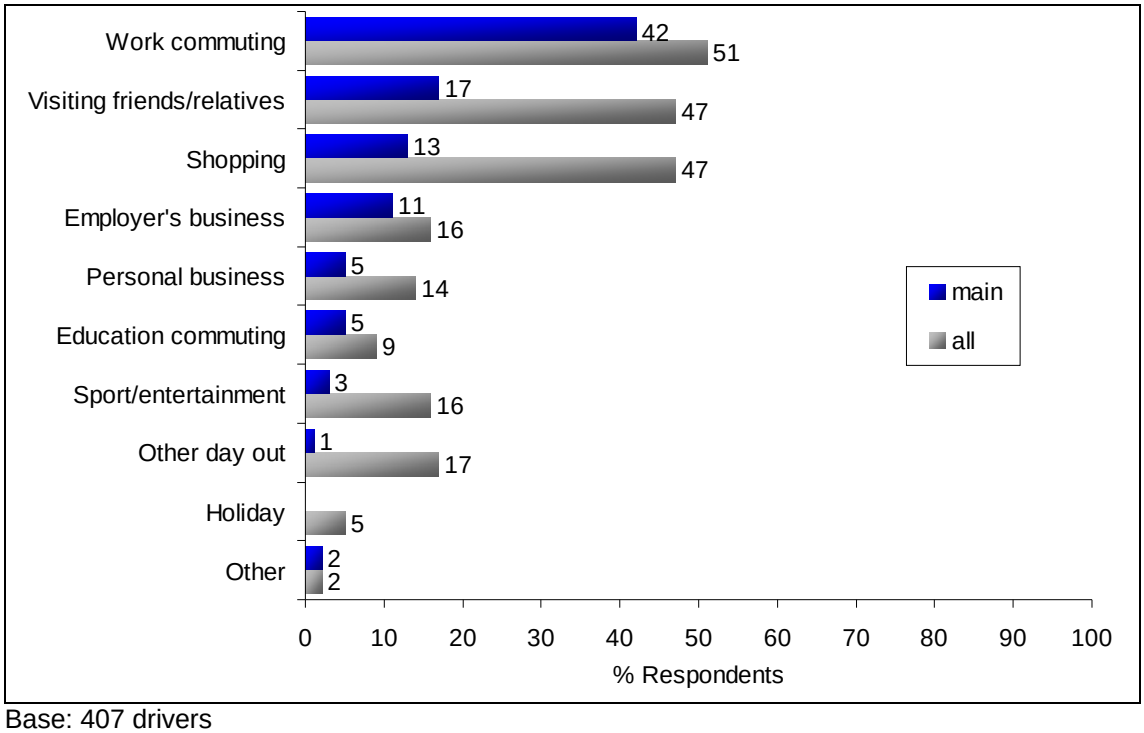
Journey Purpose

Drivers were asked for which purposes they drove on the Red Route Network. If more than one purpose was mentioned, they were asked which was the main purpose. Figure 10 shows all purposes and the main purpose for the driver sample. Overall, 2.24 purposes were mentioned by each respondent.

Work commuting was the most important journey purpose: over half (51%) mentioned this as one of the purpose for driving on the Red Route Network, and 42% said it was the main purpose.

Almost half (47%) mentioned visiting friends/relatives and shopping as purposes for driving on the Red Route Network, although a relatively small proportion said these were the main purpose: 17% and 13% respectively.

Figure 10: All purposes and main purpose for driving on the Red Route Network – all drivers

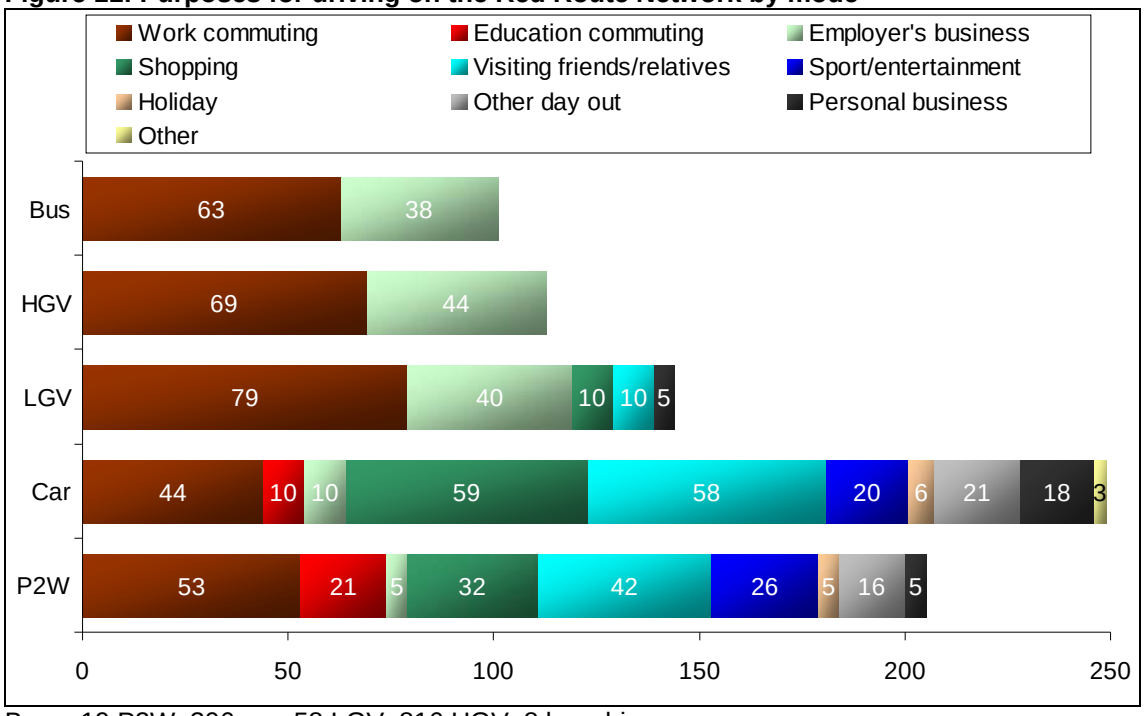


Base: 407 drivers

All purposes for driving on the Red Route Network by mode are shown in Figure 11 and the main purpose by mode is shown in Figure 12.

In terms of all purposes mentioned, work commuting and employers business were the most mentioned purposes for bus, HGV and LGV drivers. For car drivers shopping and visiting friends/relatives were the most mentioned purposes. For P2W drivers work commuting and visiting friends/relatives were the most mentioned purposes.

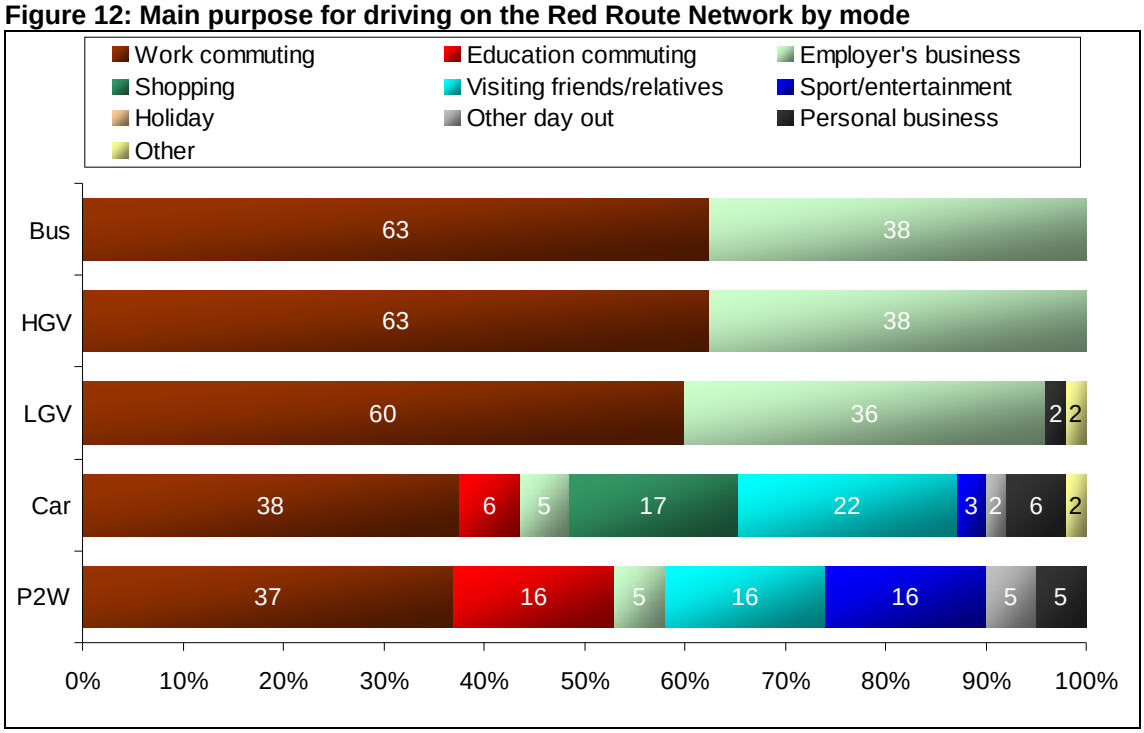
Figure 11: Purposes for driving on the Red Route Network by mode



Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

Work commuting was the most important purpose for drivers of all modes. Employers business was the second most important purpose for bus, HGV and LGV drivers.

Figure 12: Main purpose for driving on the Red Route Network by mode

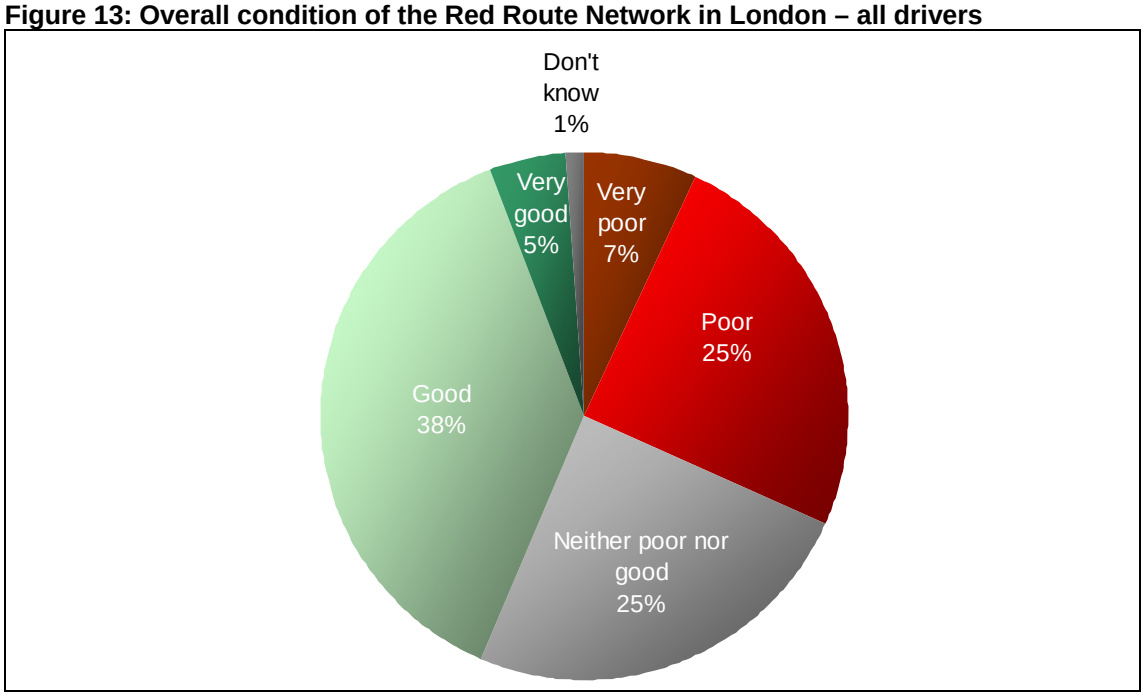


Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers
Note: percentages may sum to more than 100% because of rounding

3.4 Current Perceptions of Carriageway Condition

On balance, drivers rated the overall condition of the Red Route Network in London as good: 43% said it was good or very good and 32% said it was poor or very poor.

Figure 13: Overall condition of the Red Route Network in London – all drivers



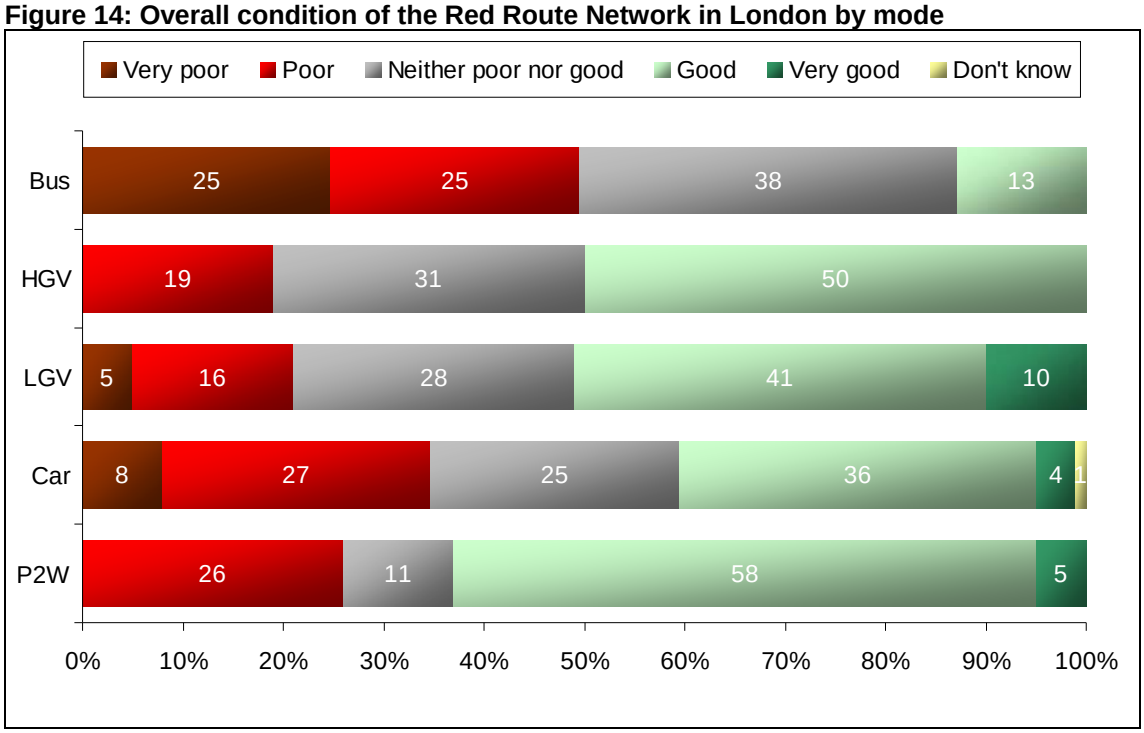
Base: 407 drivers

Analysis by mode shows that bus drivers[2] were most critical of the condition of the Red Route Network with half saying it was poor or very poor and only 13% saying it was good or very good.

Car drivers were the next most critical with 35% saying it was poor or very poor compared to 40% saying it was good or very good.

About half of HGV and LGV drivers said the condition of the Red Route Network was good or very good as did 63% of P2W drivers.

Figure 14: Overall condition of the Red Route Network in London by mode



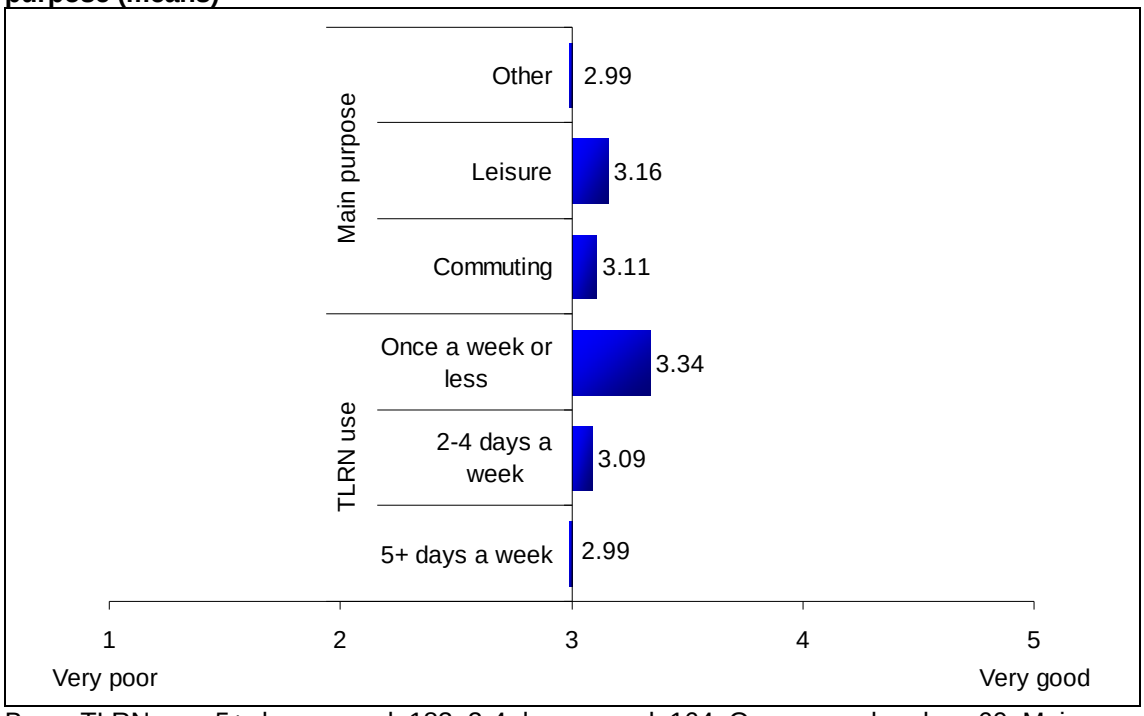
Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

Mean rating scores were calculated on the basis of 1 = very poor and 5 = very good. The mean rating was 3.08, just higher than the mid point.

Infrequent users rated the condition of the Red Route Network better than frequent users and leisure users rated the condition of the Red Route Network better than commuters and other purpose users.

[2] Please note the sample of bus drivers is very small

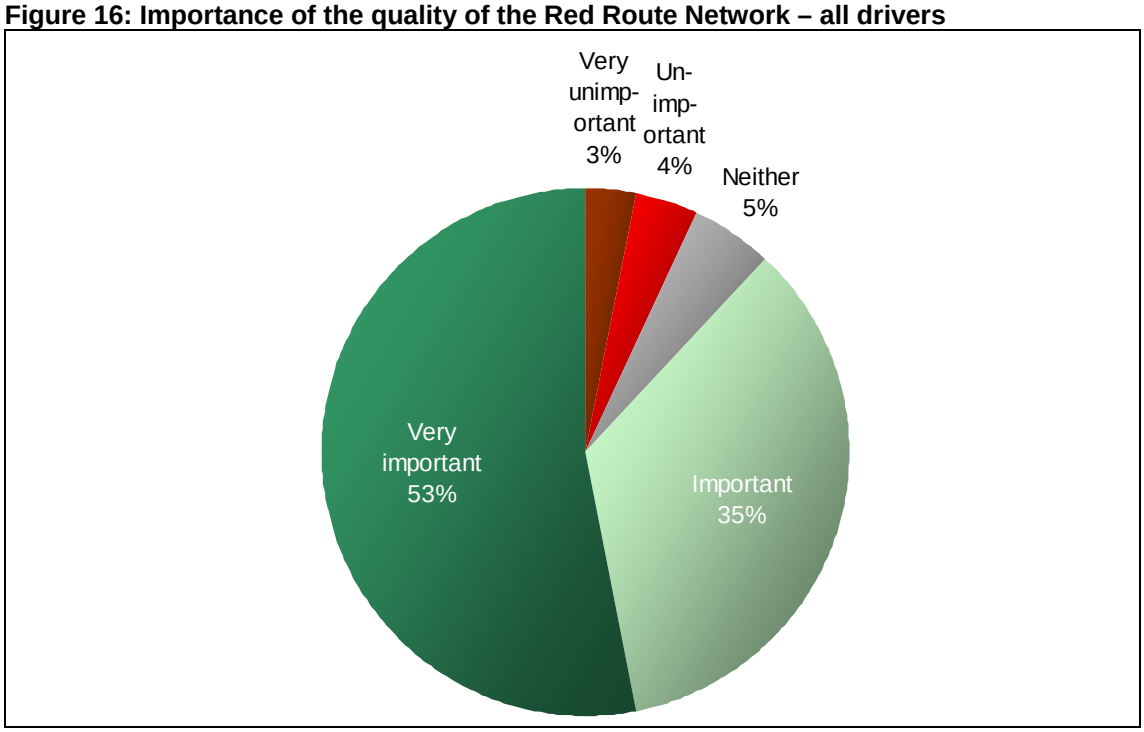
Figure 15: Overall condition of the Red Route Network in London by TLRN use and main purpose (means)



Base: TLRN use: 5+ days a week 183, 2-4 days a week 164, Once a week or less 60; Main purpose: Commuting 193, leisure 89, Other 126

The importance of the quality of the Red Route Network to the driver was probed. As can be seen from Figure 16, almost nine tenths of drivers thought it was important: 53% very important and 35% important.

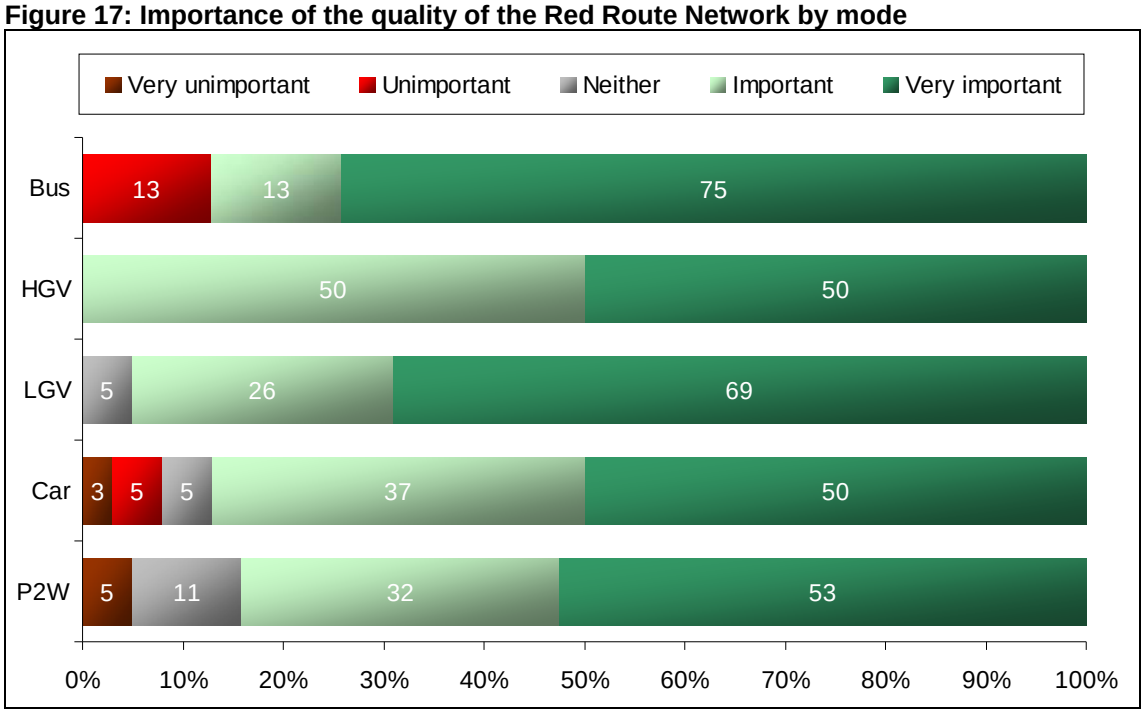
Figure 16: Importance of the quality of the Red Route Network – all drivers



Base: 407 drivers

Analysis by mode is shown in Figure 17.

Figure 17: Importance of the quality of the Red Route Network by mode



Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

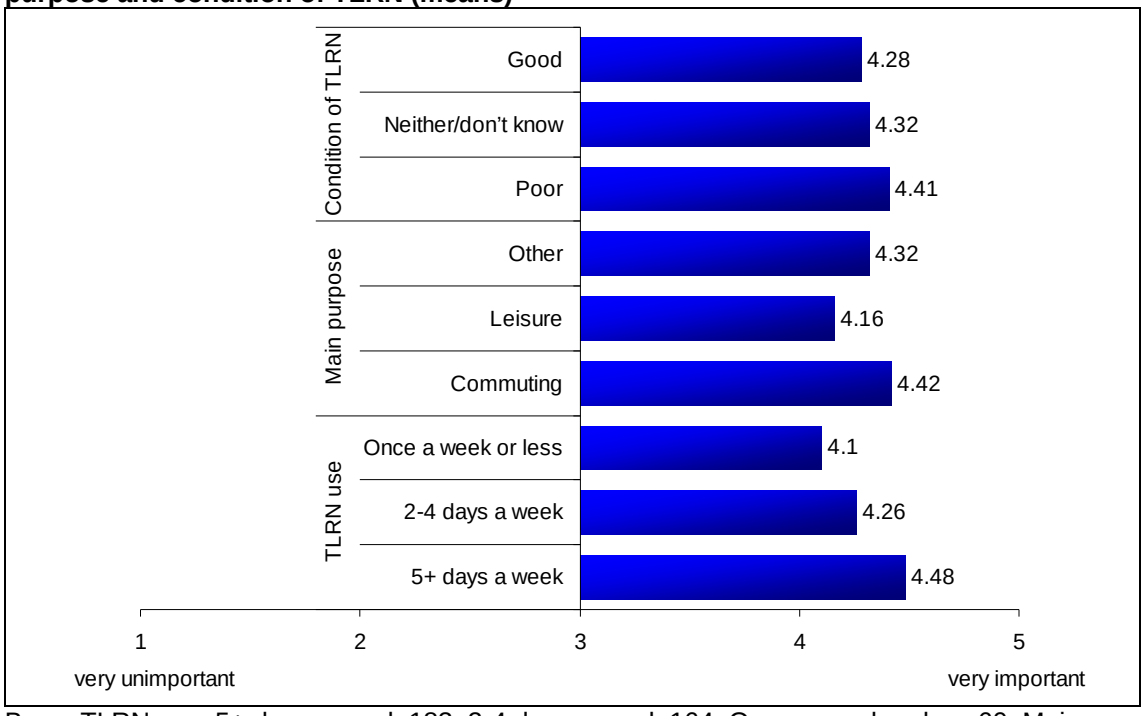
Mean rating scores were calculated on the basis of 1 = very unimportant and 5 = very important. The mean rating was 4.33. It was most important for LGV, HGV and bus drivers (who also drive on the Red Route Network most) and least important for car and P2W drivers:

- LGV 4.64
- HGV 4.50
- Bus 4.50
- Car 4.27
- P2W 4.26
- All drivers 4.33

The mean importance ratings by frequency of TLRN use, main purpose and the perceived condition of TLRN are shown in Figure 18.

This shows that the worse the condition of the TLRN the more important the quality and the more frequent the usage the more important the quality.

Figure 18: Importance of the quality of the Red Route Network by TLRN use, main purpose and condition of TLRN (means)



Base: TLRN use: 5+ days a week 183, 2-4 days a week 164, Once a week or less 60; Main purpose: Commuting 193, leisure 89, Other 126; condition of TLRN: poor 129, neither/don't know 106, good 172

3.5 Rating of Carriageway Defects

Respondents were asked the following two questions for each of eight carriageway condition defects

a) At which level of ……..[3] would you **prefer** TfL to intervene?
b) At which level do you think TfL **must** intervene?

For each, the answer could be given on an 11 point scale:

- 0%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

Any response not on the scale was rounded, eg 4% was entered as 0% and 15% was entered as 20%.

[3] The relevant condition defect

The order that the carriageway condition defects were presented was randomised.

To assist respondents with answering these questions, the interviewer ran through a dummy example which featured rutting.

Figure 19 to Figure 26 illustrate the responses to each of the two questions for the eight carriageway condition defects.

Rutting

Rutting was described as follows:

> *"Rutting is depression of the carriageway surface in the vehicle wheel path."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

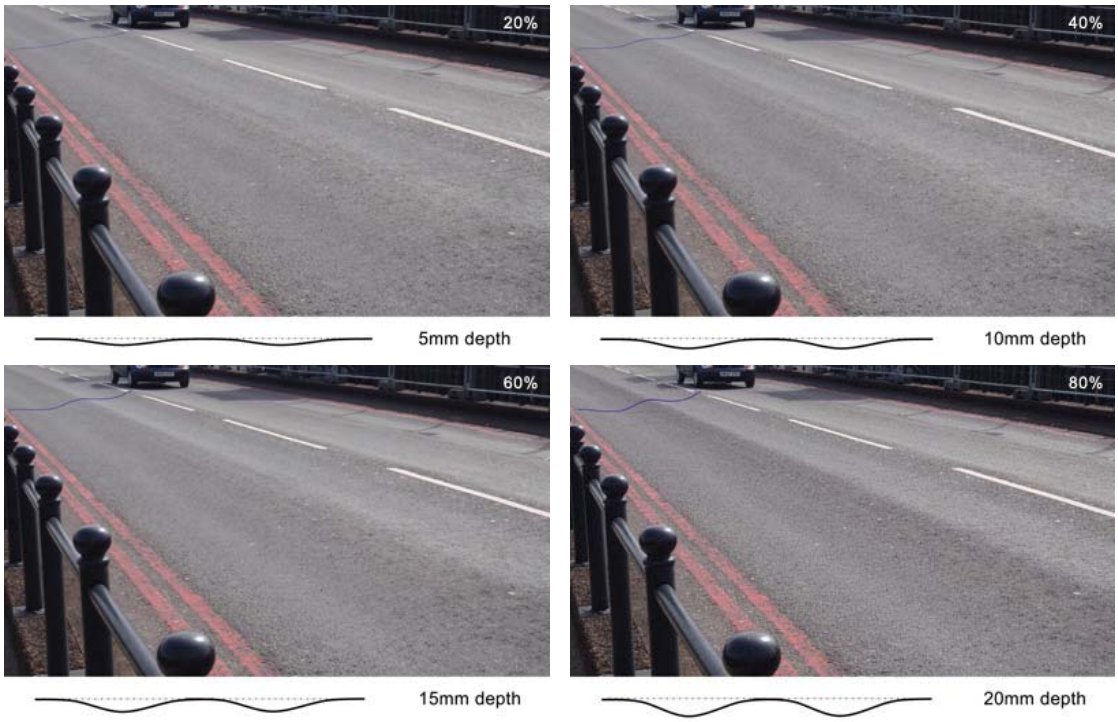
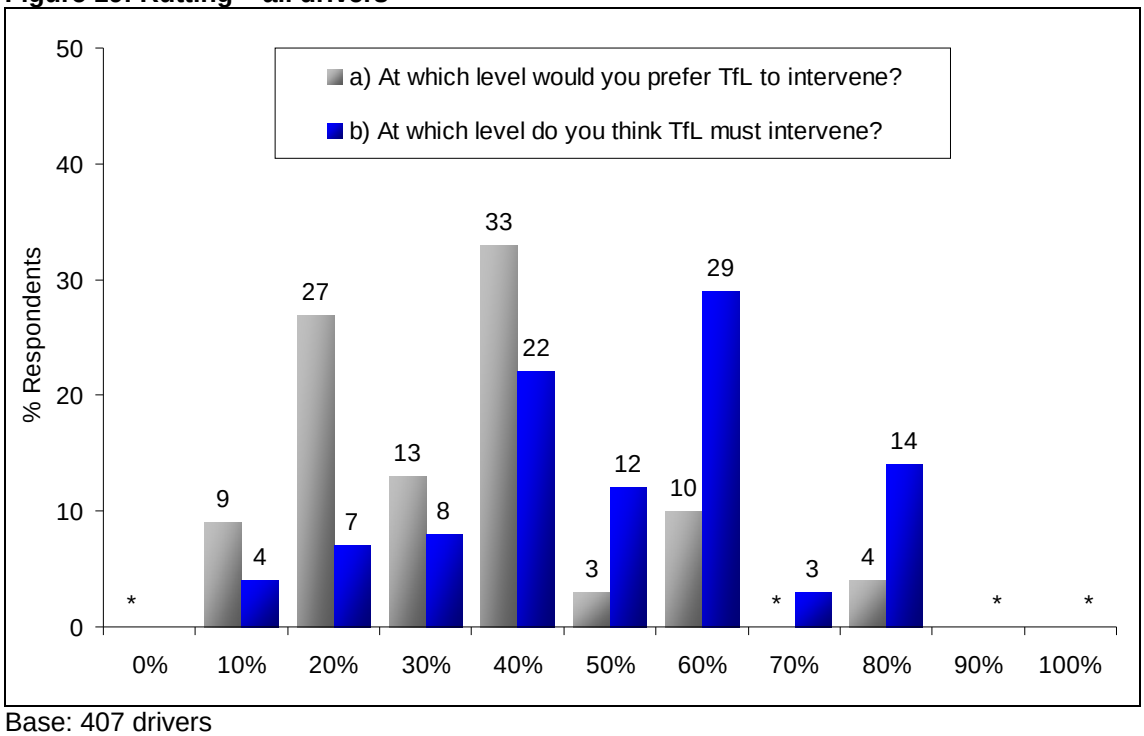


Figure 19: Rutting – all drivers



Base: 407 drivers
* = less than 0.5%

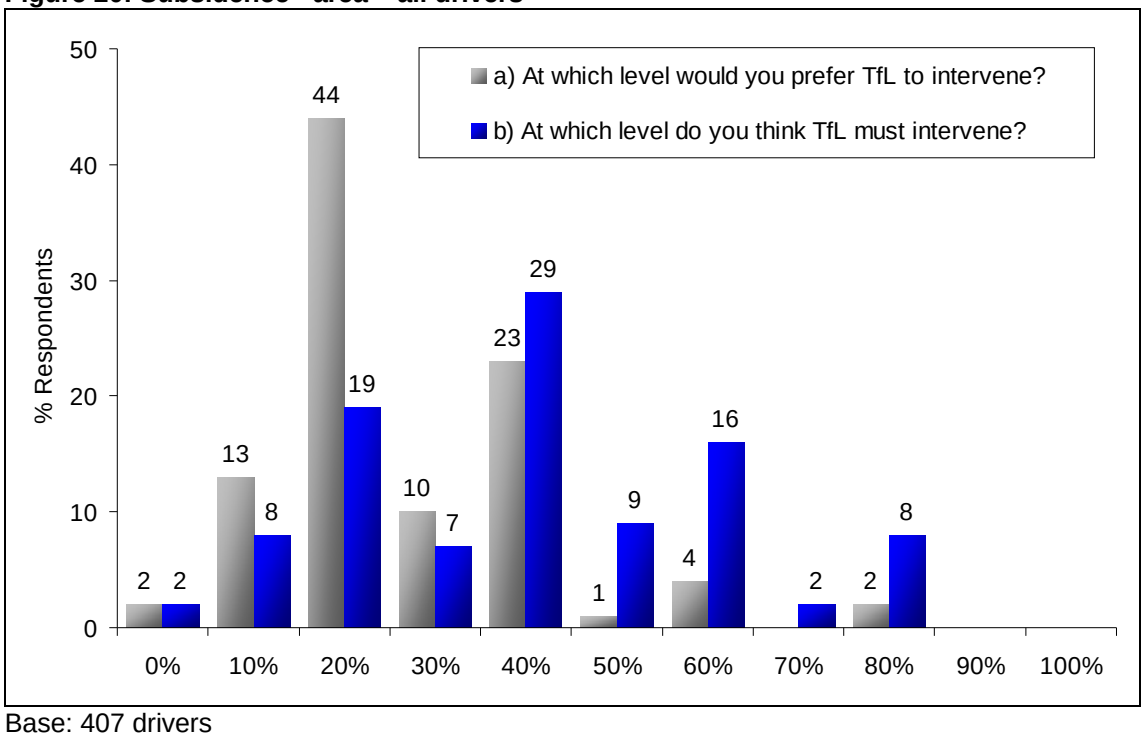
Subsidence – area

Subsidence – area was described as follows:

"Subsidence is where part of the carriageway subsides to a lower level."

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 20: Subsidence - area – all drivers



Base: 407 drivers

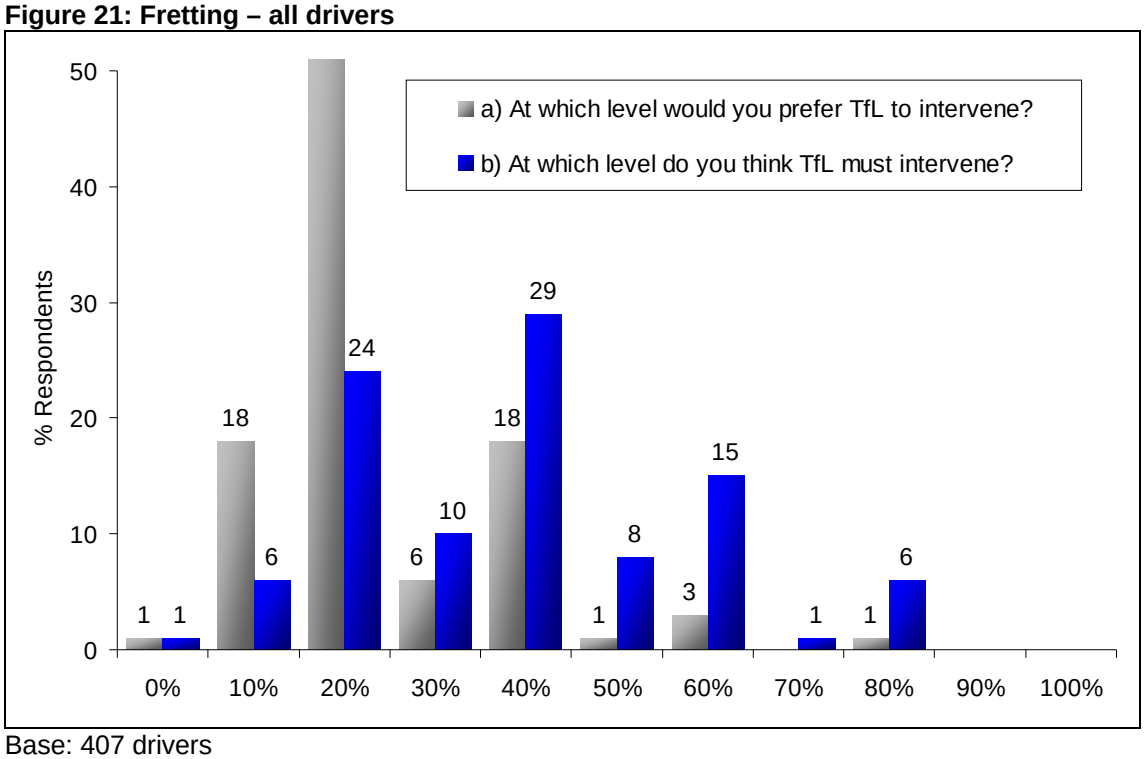
Fretting

Fretting was described as follows:

> *"Fretting is where the carriageway surface breaks up."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 21: Fretting – all drivers



Base: 407 drivers

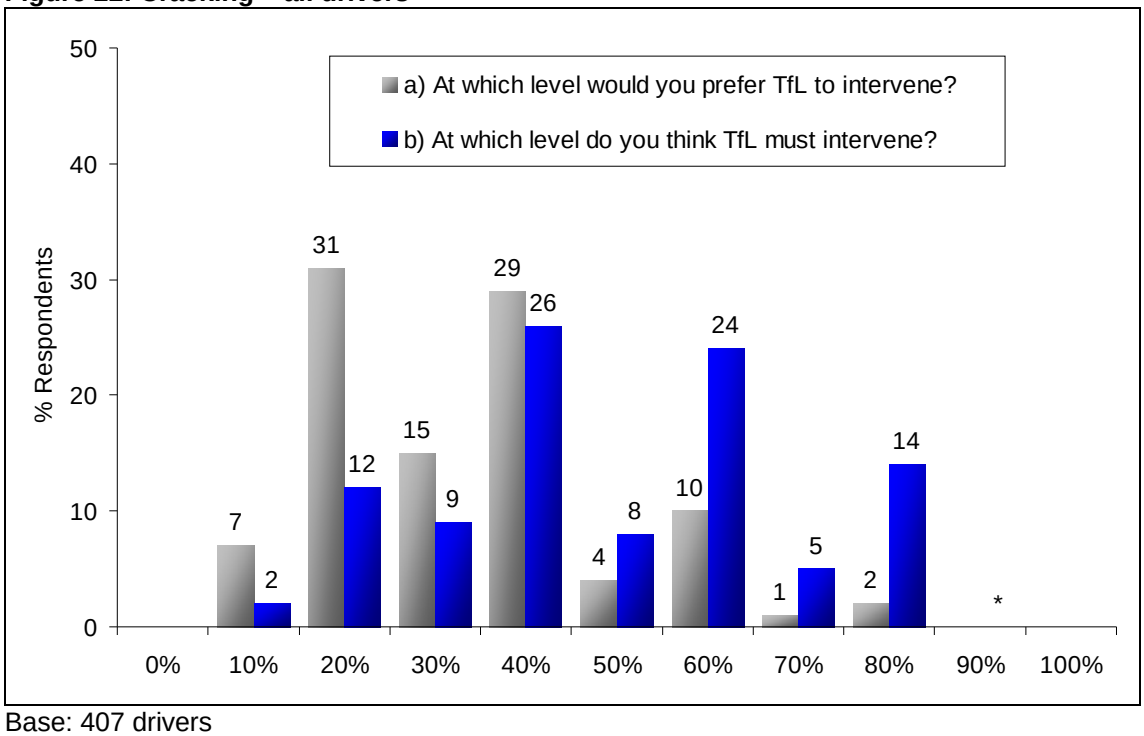
Cracking

Cracking was described as follows:

> *"Cracking – cracks on the carriageway surface."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 22: Cracking – all drivers



Base: 407 drivers
* = less than 0.5%

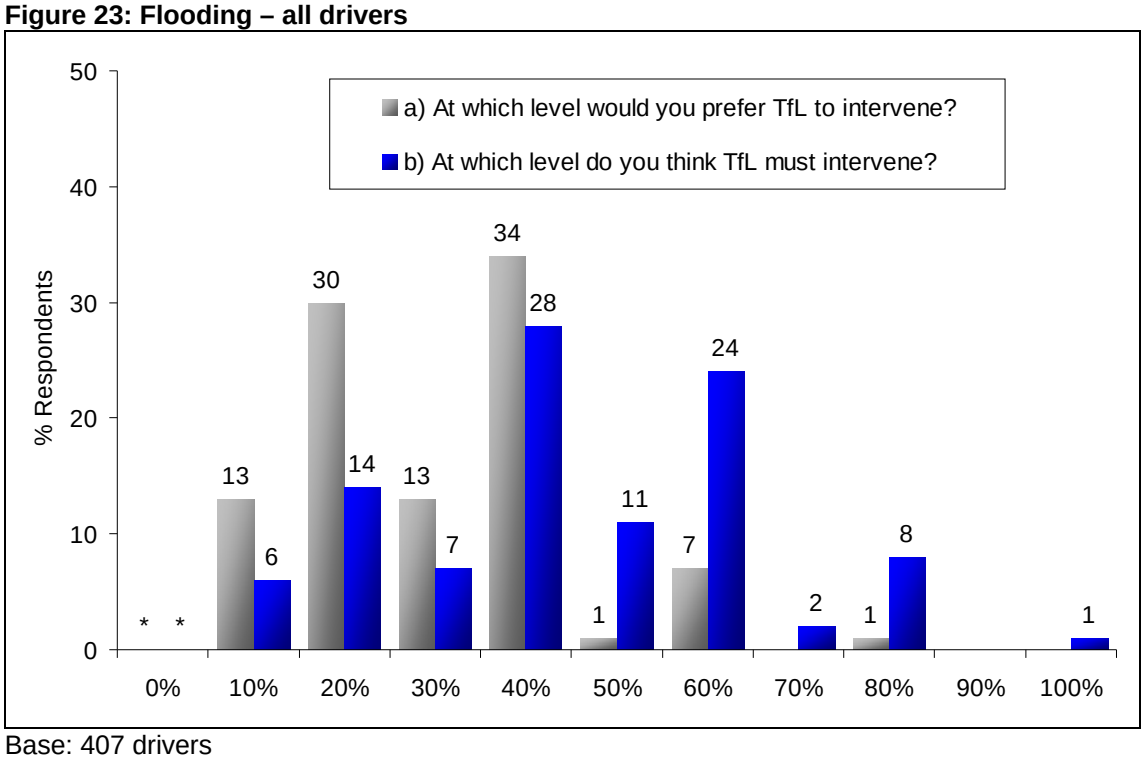
Flooding

Flooding was described as follows:

> *"Flooding is where parts of the carriageway remain under water after rain."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 23: Flooding – all drivers



Base: 407 drivers
* = less than 0.5%

Ironworks

Ironworks was described as follows:

> *"Ironworks is where ironwork is raised or sunken."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

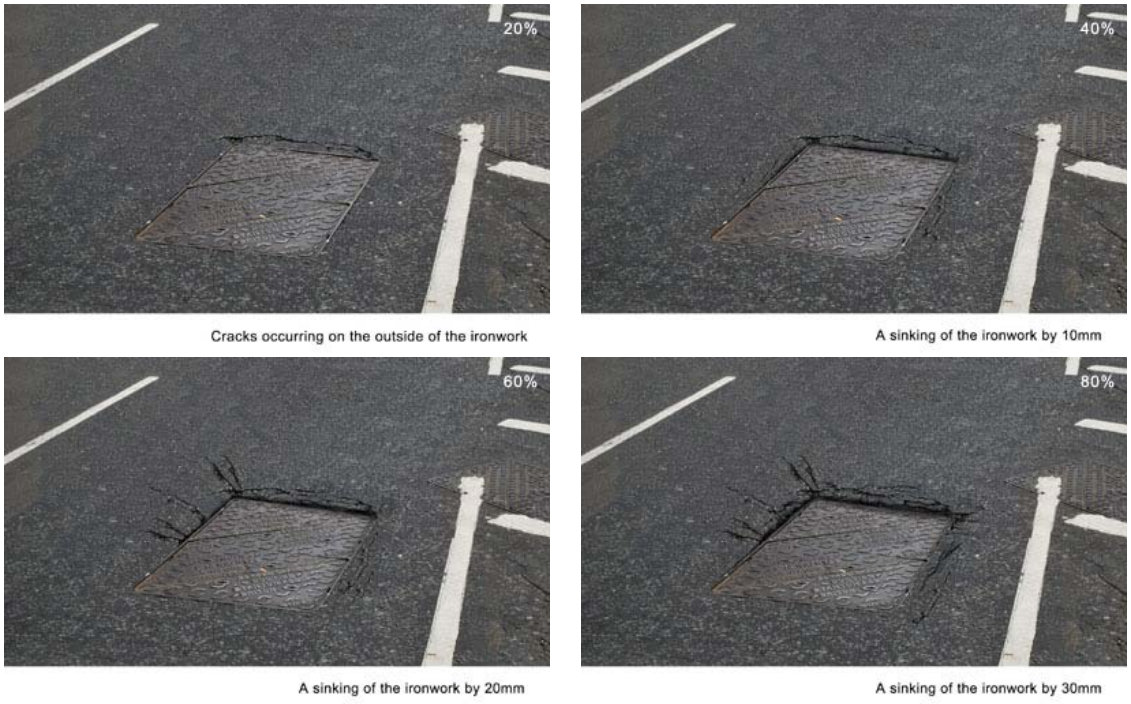
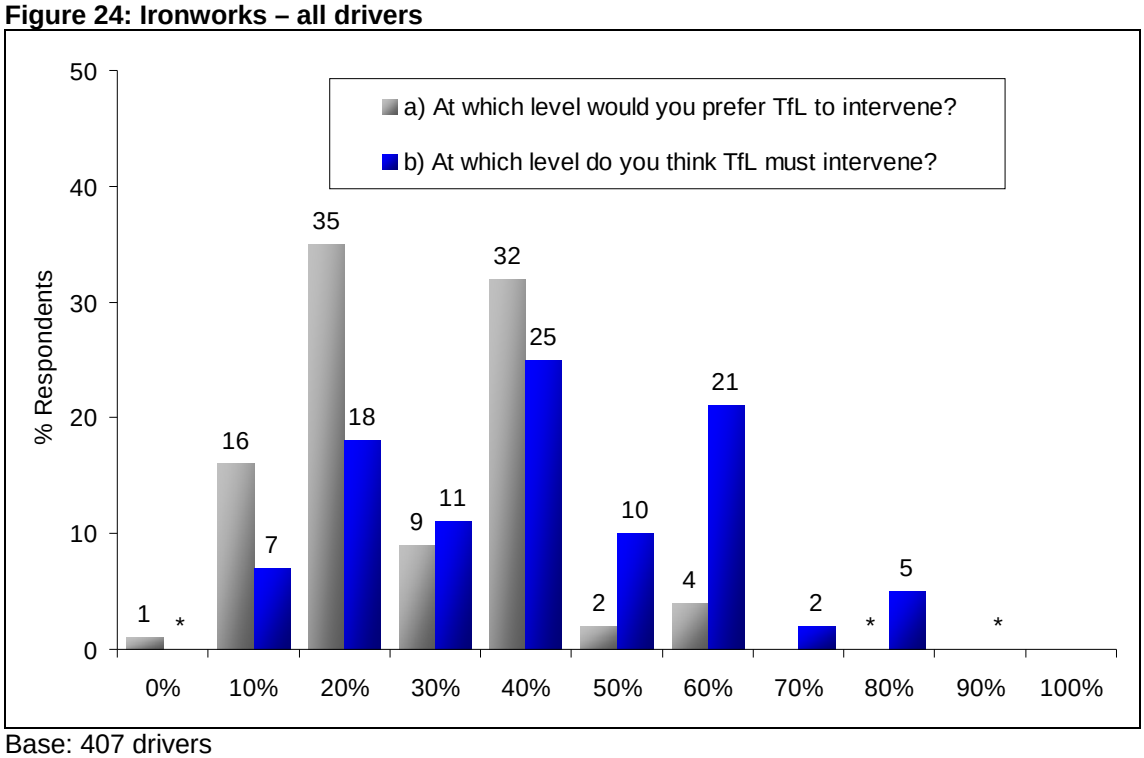


Figure 24: Ironworks – all drivers



Base: 407 drivers
* = less than 0.5%

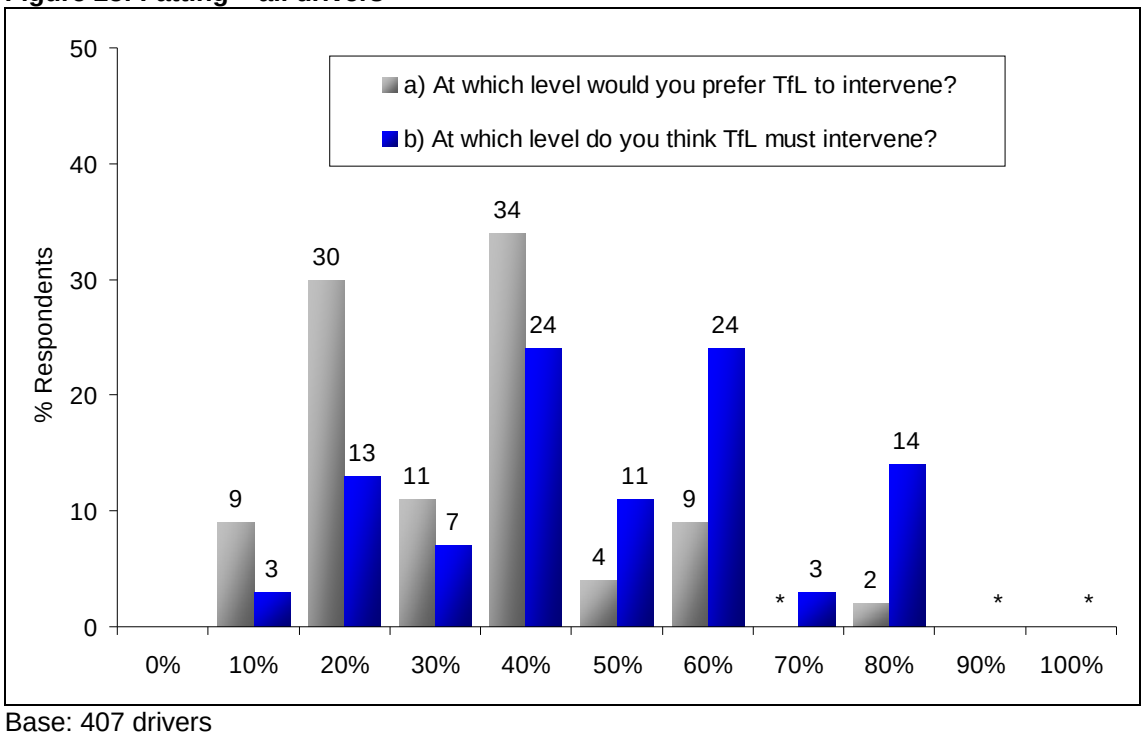
Fatting

Fatting was described as follows:

> *"Fatting is a loss of surface texture on the carriageway."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 25: Fatting – all drivers



Base: 407 drivers
* = less than 0.5%

Subsidence – depth

Subsidence – depth was described as follows:

"Subsidence is where part of the carriageway subsides to a lower level."

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

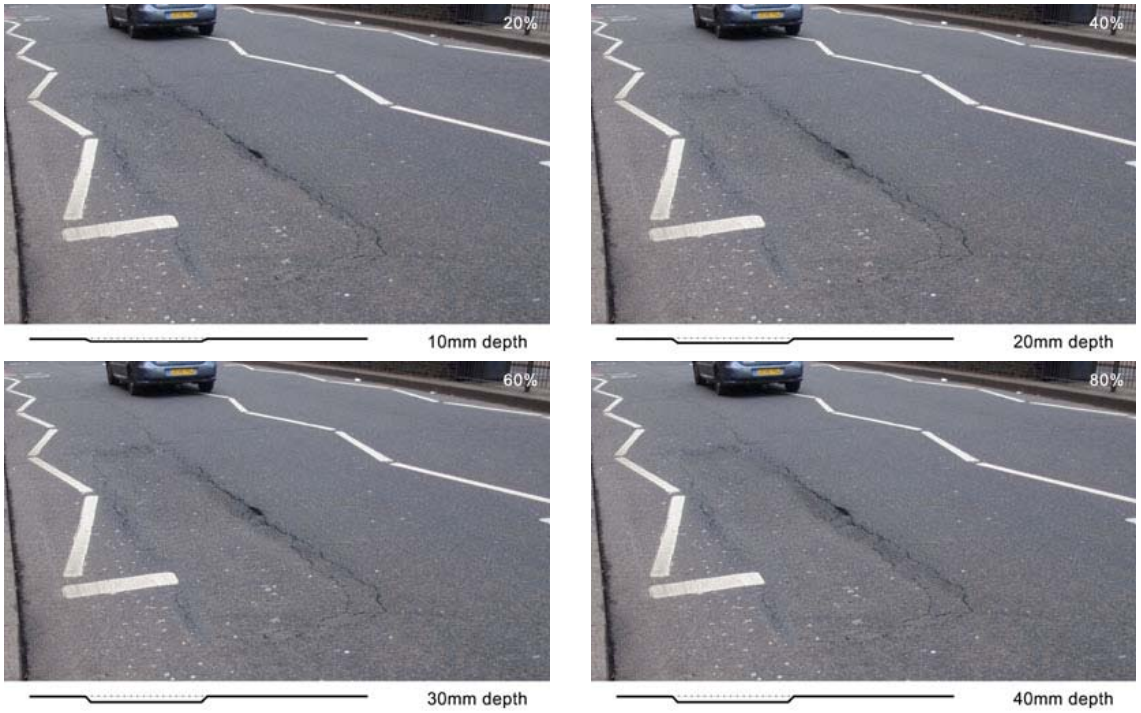
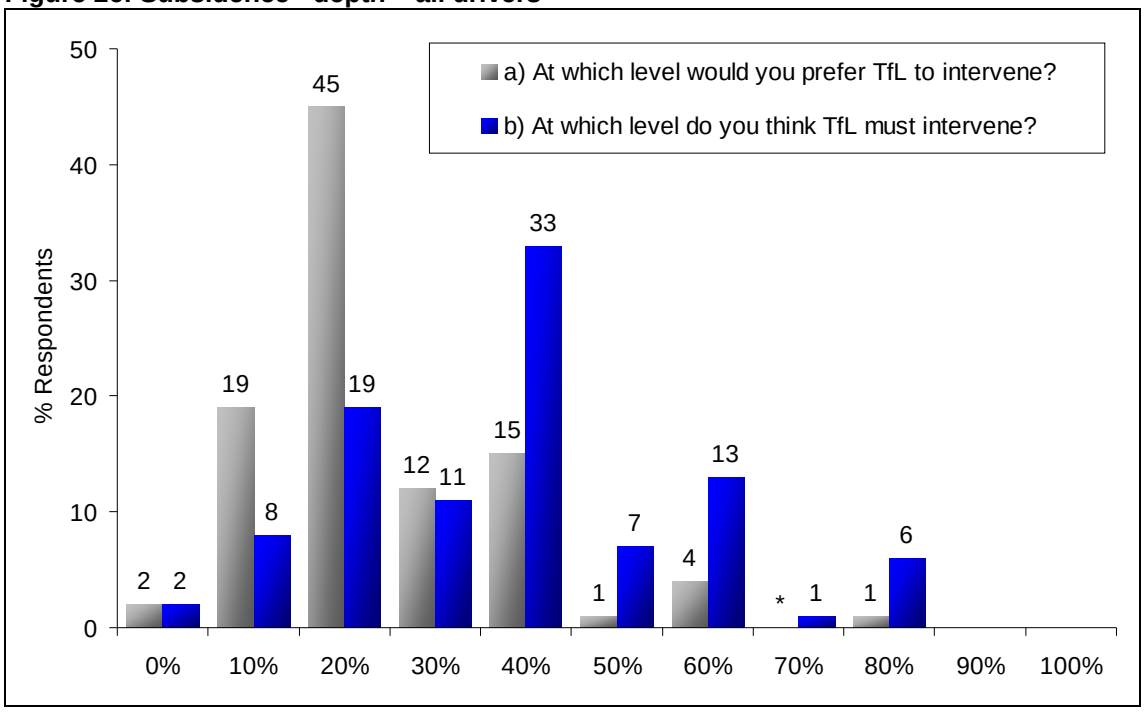


Figure 26: Subsidence - depth – all drivers

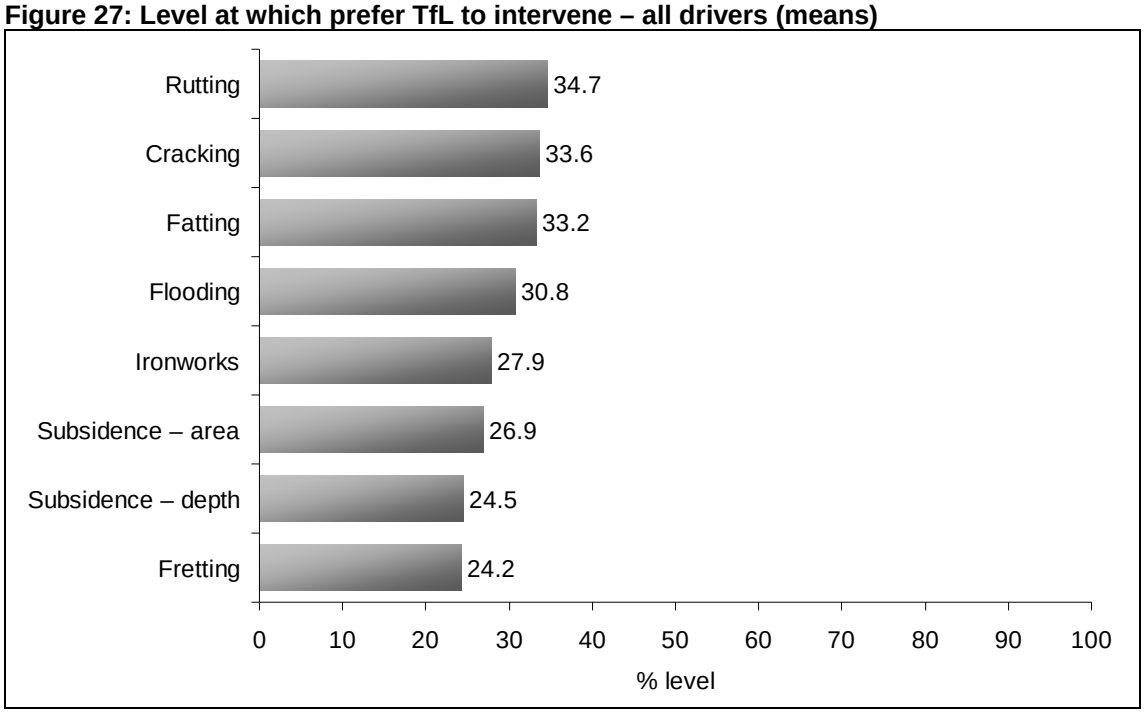


Base: 407 drivers
* = less than 0.5%

For all eight carriageway condition defects there was a tendency for there to be a higher level for 'TfL must intervene' than for 'prefer TfL to intervene' as would be expected.

The mean levels for 'prefer TfL to intervene' are shown in Figure 27. The lower the level the worse the condition defect. Fretting and subsidence (both area and depth) are the priorities for drivers.

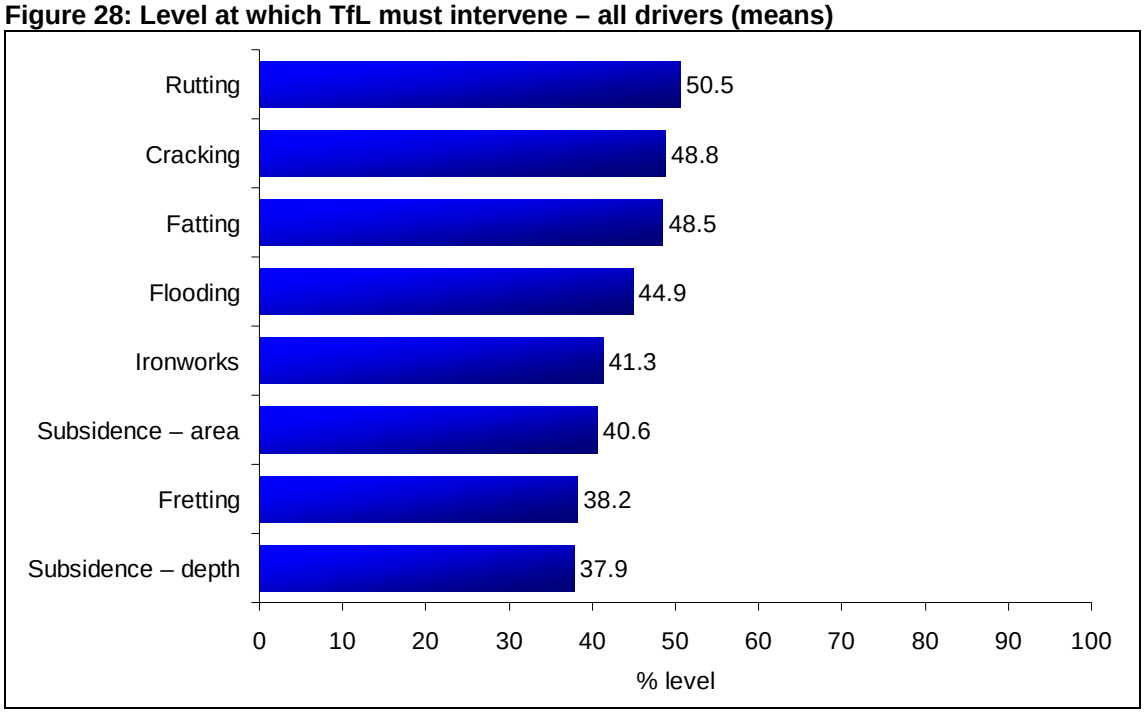
Figure 27: Level at which prefer TfL to intervene – all drivers (means)



Base: 407 drivers

The mean levels for 'TfL must intervene' are shown in Figure 28. The lower the level the worse the condition defect. Subsidence (both area and depth) and fretting are again the priorities for drivers.

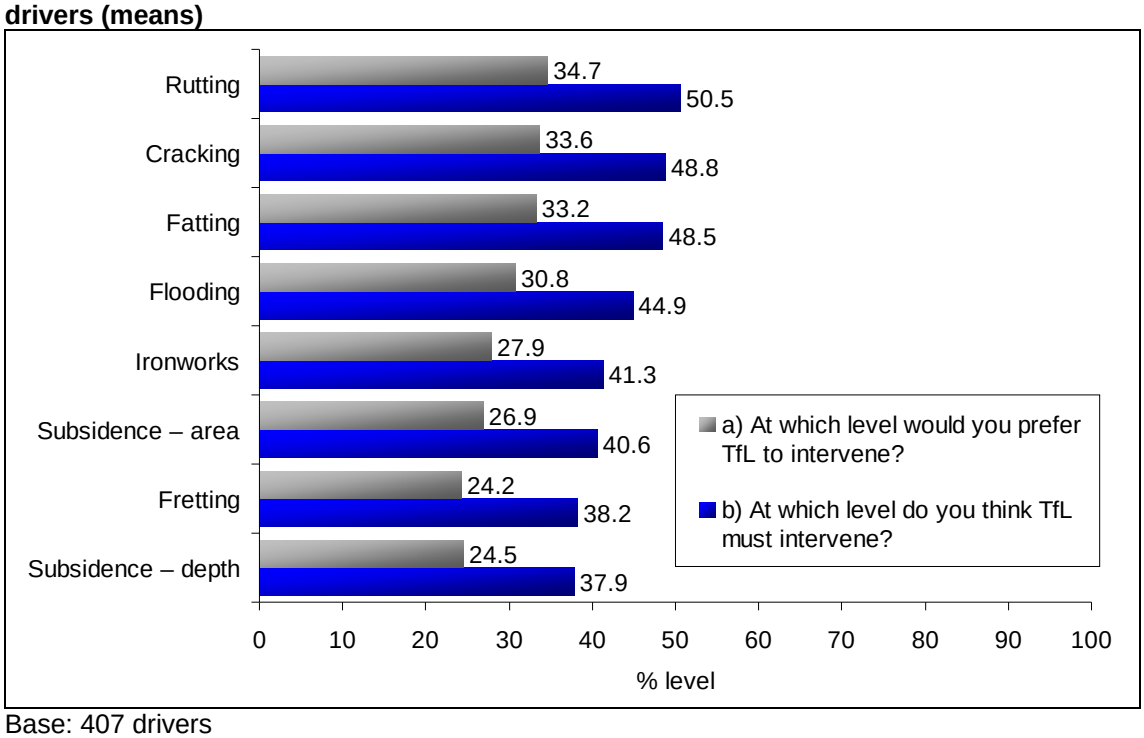
Figure 28: Level at which TfL must intervene – all drivers (means)



Base: 407 drivers

These are combined in Figure 29 (ranked in order of 'TfL must intervene'). The gap between the preferring TfL to intervene and TfL must intervene ranges from 13.4% to 15.8% with an average of 14.4%

Figure 29: Levels at which prefer TfL to intervene and at which TfL must intervene – all drivers (means)



Base: 407 drivers

Table 1 shows the means and standard deviations (SD) for the levels at which respondents would prefer TfL to intervene and at which they think TfL must intervene by driver type.

Table 1: Levels at which prefer TfL to intervene and at which TfL must intervene by driver type (means and standard deviations (SD))

		Total	P2W	Car	LGV	HGV	Bus
Rutting							
At what level of defect would you prefer TfL to intervene?	**mean**	**34.7**	**23.2**	**35.4**	**37.4**	**25.6**	**32.5**
	SD	17.0	12.9	16.8	18.4	10.3	23.8
At what level do you think TfL must intervene?	**mean**	**50.5**	**36.8**	**52.7**	**49.0**	**38.1**	**36.3**
	SD	19.2	18.6	18.8	18.8	13.3	21.3
Subsidence – area							
At what level of defect would you prefer TfL to intervene?	**mean**	**26.9**	**22.6**	**26.7**	**30.5**	**23.8**	**25.0**
	SD	14.9	12.8	13.5	22.1	11.5	13.1
At what level do you think TfL must intervene?	**mean**	**40.6**	**35.8**	**41.7**	**40.3**	**32.5**	**27.5**
	SD	20.4	23.6	19.4	25.1	16.1	13.9
Fretting							
At what level of defect would you prefer TfL to intervene?	**mean**	**24.2**	**19.0**	**23.7**	**27.4**	**27.5**	**26.3**
	SD	13.2	9.4	12.5	15.9	16.5	16.9
At what level do you think TfL must intervene?	**mean**	**38.2**	**30.0**	**39.1**	**37.1**	**36.3**	**35.0**
	SD	18.9	18.9	18.7	19.8	17.5	21.4
Cracking							
At what level of defect would you prefer TfL to intervene?	**mean**	**33.6**	**26.8**	**33.4**	**36.9**	**31.3**	**37.5**
	SD	16.0	13.4	15.4	18.3	13.6	25.5
At what level do you think TfL must intervene?	**mean**	**48.8**	**39.0**	**50.4**	**46.6**	**41.3**	**43.8**
	SD	19.5	20.3	19.1	20.7	14.1	23.9
Flooding							
At what level of defect would you prefer TfL to intervene?	**mean**	**30.8**	**26.8**	**31.5**	**30.7**	**25.6**	**25.0**
	SD	15.0	16.4	15.5	13.0	8.9	13.1
At what level do you think TfL must intervene?	**mean**	**44.9**	**39.0**	**46.4**	**41.7**	**39.4**	**32.5**
	SD	19.6	20.3	20.4	16.1	13.9	10.4
Ironworks							
At what level of defect would you prefer TfL to intervene?	**mean**	**27.9**	**24.2**	**28.5**	**27.4**	**23.8**	**23.8**
	SD	13.5	12.2	13.8	13.6	9.6	10.6
At what level do you think TfL must intervene?	**mean**	**41.3**	**37.4**	**43.1**	**36.9**	**30.6**	**36.3**
	SD	18.8	19.4	18.9	17.8	11.2	20.0
Fatting							
At what level of defect would you prefer TfL to intervene?	**mean**	**33.2**	**26.3**	**33.5**	**36.0**	**26.9**	**28.8**
	SD	15.9	9.6	16.6	13.2	8.7	19.6
At what level do you think TfL must intervene?	**mean**	**48.5**	**42.1**	**49.4**	**49.1**	**40.0**	**41.3**
	SD	20.1	17.8	20.9	16.3	13.7	24.2
Subsidence – depth							
At what level of defect would you prefer TfL to intervene?	**mean**	**24.5**	**20.0**	**23.8**	**29.0**	**25.0**	**26.3**
	SD	13.8	10.0	12.6	18.6	9.7	24.5
At what level do you think TfL must intervene?	**mean**	**37.9**	**33.2**	**38.1**	**40.3**	**32.5**	**31.3**
	SD	18.6	20.3	17.5	23.6	13.9	23.0
Base		**407**	**19**	**306**	**58**	**16**	**8**

3.6 Diagnostics

A series of questions were asked to check whether respondents found the photos to be clear and understood the key questions on intervention.

Ninety eight per cent said the photos were clear to them. The two per cent (12 respondents) who found one or more photos unclear were asked which photos they found unclear. The photos of rutting were the most likely to be found unclear with 5 of the 12 mentioning this. The numbers and percentages (of the whole driver sample) are shown below.

	n	%
• Rutting	5	1.2
• Fretting	3	0.7
• Subsidence - depth	3	0.7
• Subsidence - area	2	0.5
• Flooding	2	0.5
• Fatting	2	0.5
• Cracking	1	0.2
• Ironworks	1	0.2

On average, 2.3 photos were unclear for these 12 respondents.

Respondents were asked whether it was clear what they were being asked when they were asked “at what defect % would you **prefer** TfL to intervene” and “at what defect % do you think TfL **must** intervene.”

In both cases, all respondents said it was clear.

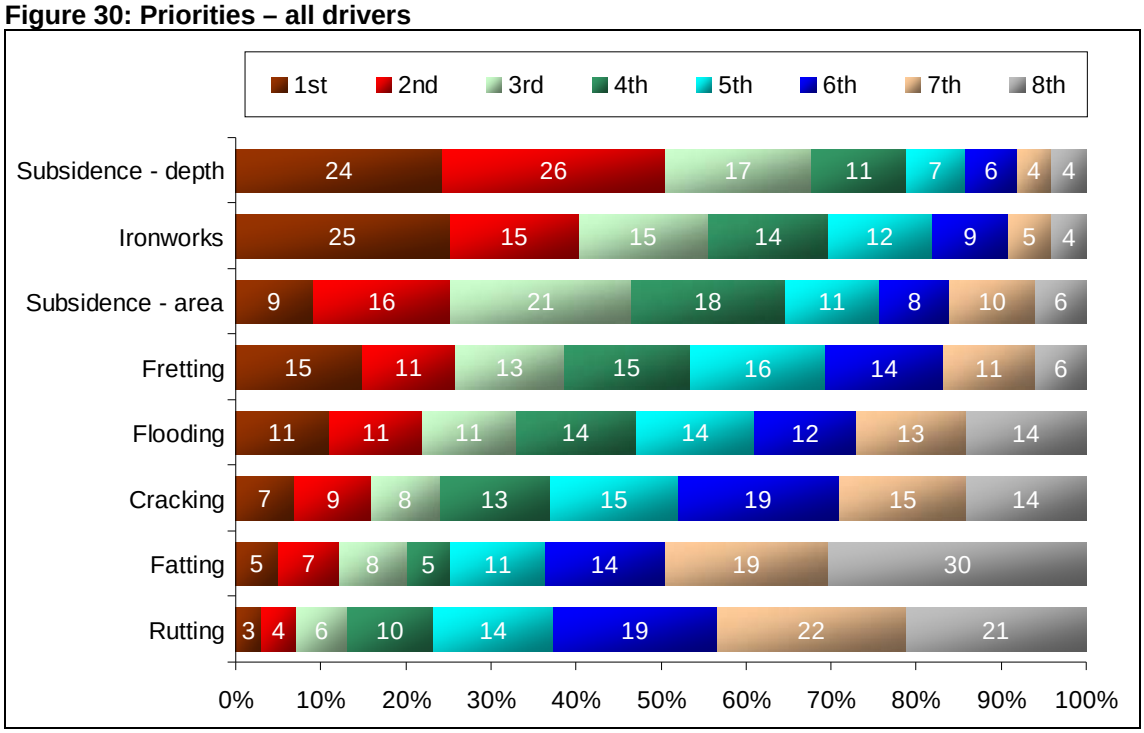
Overall, the images and key questions worked well.

3.7 Priorities

Respondents were asked to rank the condition defects in terms of priority for improvements.

Figure 30 below shows the scores and Figure 31 shows the mean priorities (where 8 = highest priority and 1 = lowest priority). The ranking for both figures is based on the means.

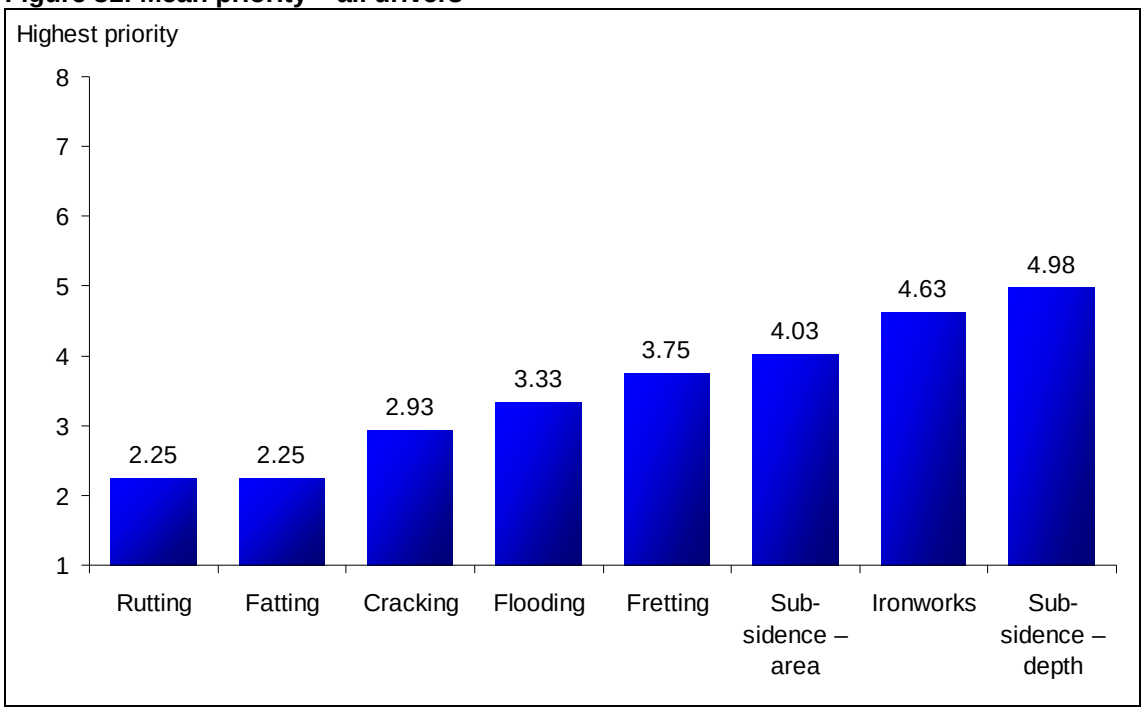
Figure 30: Priorities – all drivers



Base: 407 drivers

The top priority is subsidence – depth followed by ironworks, subsidence – area and fretting. These fairly closely match the responses to the questions on TfL intervening.

Figure 31: Mean priority – all drivers



Base: 407 drivers

3.8 Comments

Following the questions on priorities respondents were asked:

> *"Do you have any other comments you would like to make on the condition of the Transport for London road network?"*

Over three quarters (77%) made comments. These are included in Appendix D.

Eleven per cent of the comments concerned potholes, including comments that potholes were missing from the research.

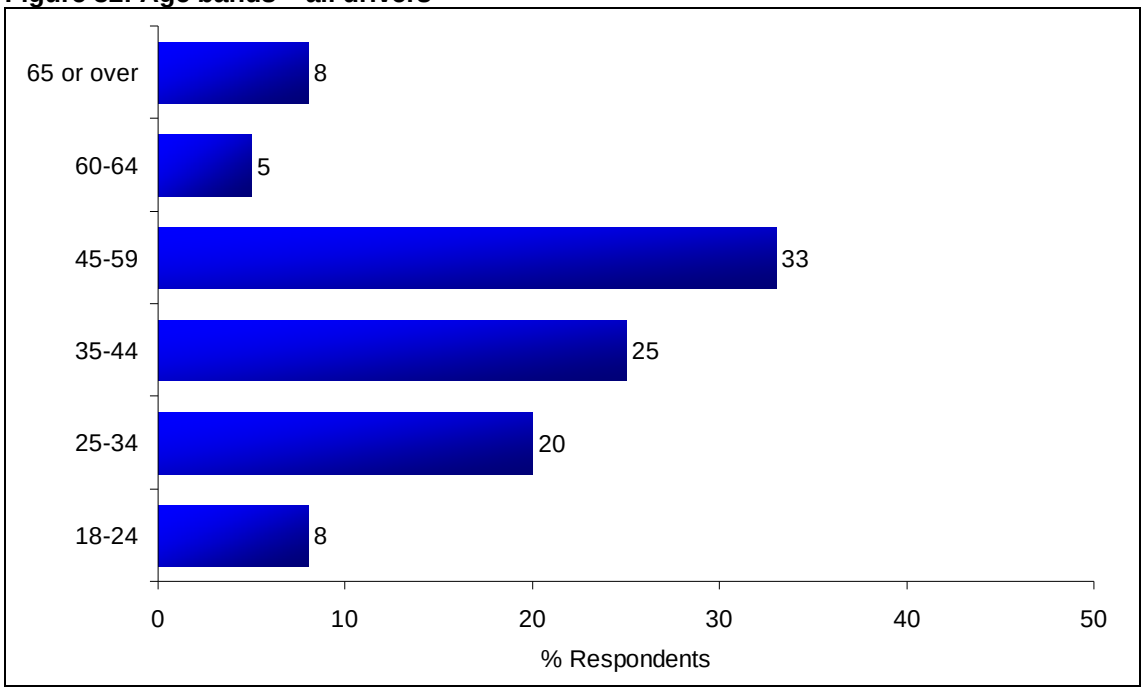
3.9 Respondent Characteristics

Age

There were age quotas for car and P2W drivers.

The age distribution is shown in Figure 32. A third of drivers were aged 45-59 years old, a quarter 35-44 years old and a fifth 25-44 years old.

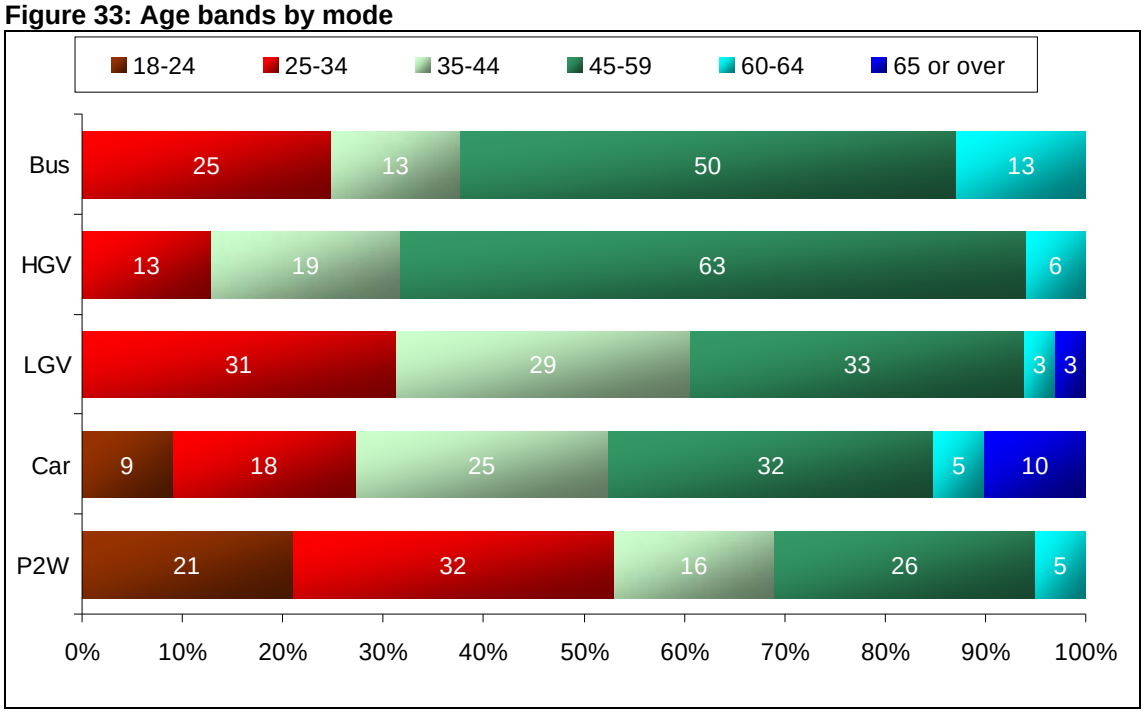
Figure 32: Age bands – all drivers



Base: 407 drivers

The HGV and bus driver samples had an older age profile than other drivers: 69% of HGV drivers and 63% of bus drivers aged over 45 compared to between 31% and 47% for other drivers.

Figure 33: Age bands by mode



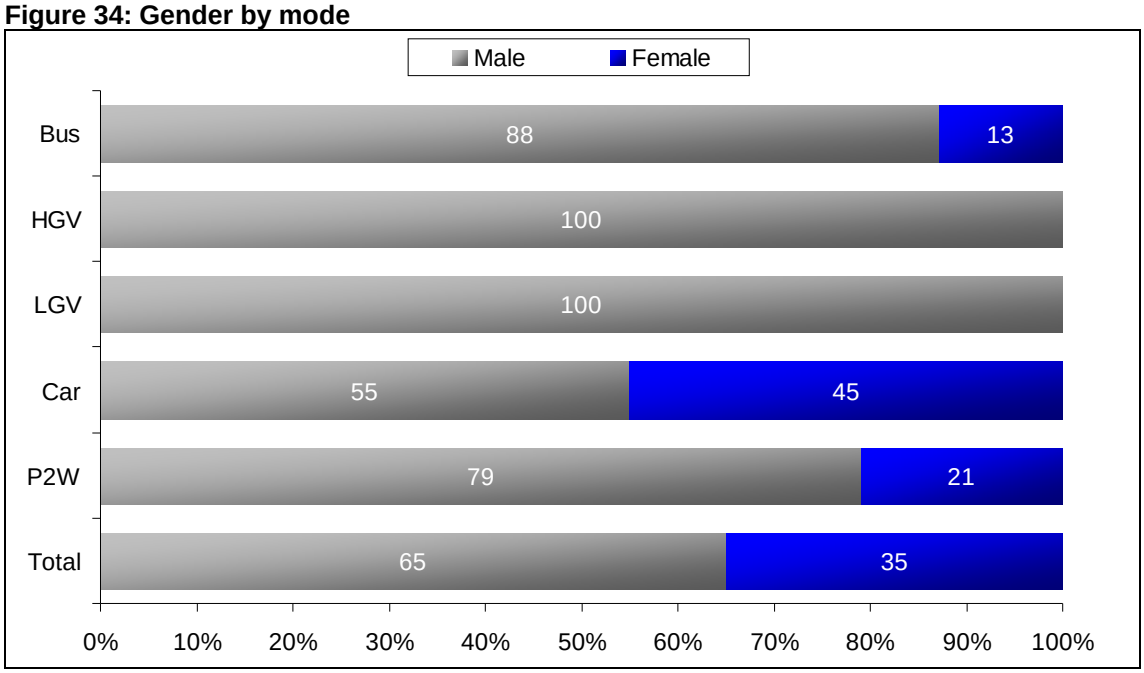
Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

Gender

There were gender quotas for car and P2W drivers.

Almost two thirds of the driver sample (65%) was male. All HGV and LGV drivers were male as were 88% of bus drivers.

Figure 34: Gender by mode

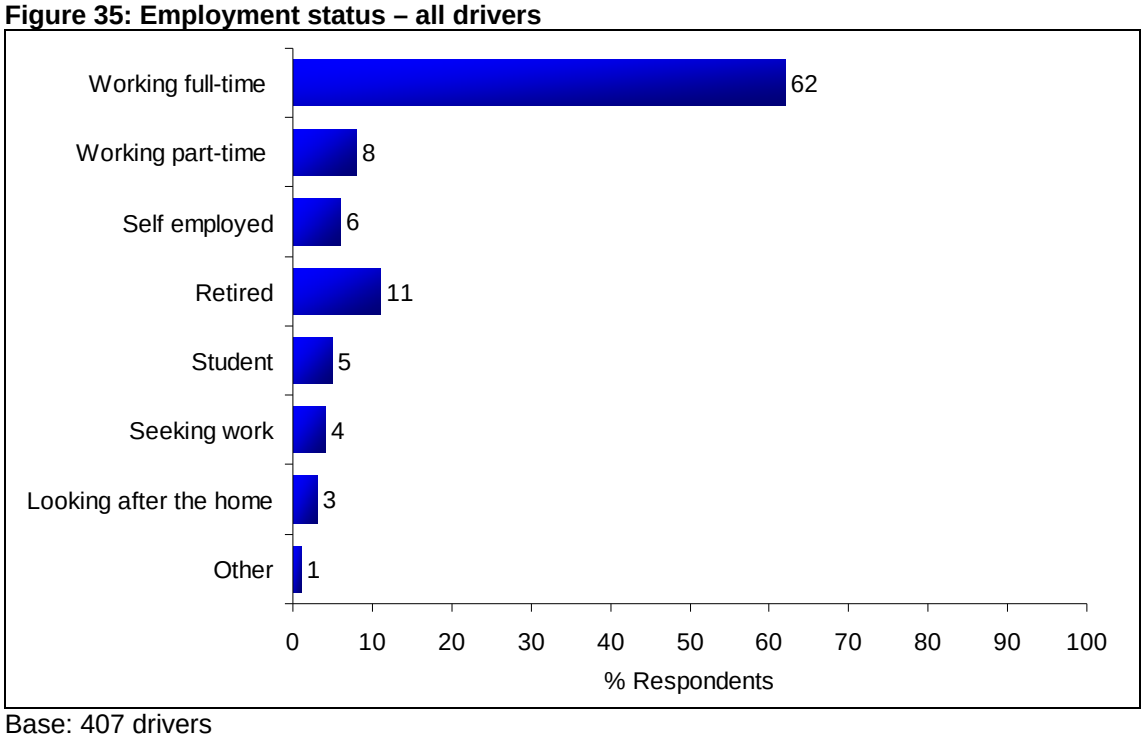


Base: Total 407 drivers, 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

Employment status

Over three quarters (76%) of the sample were employed: 62% full time and 8% part time and 6% self-employed. Eleven per cent were retired and 6% were students. See Figure 35.

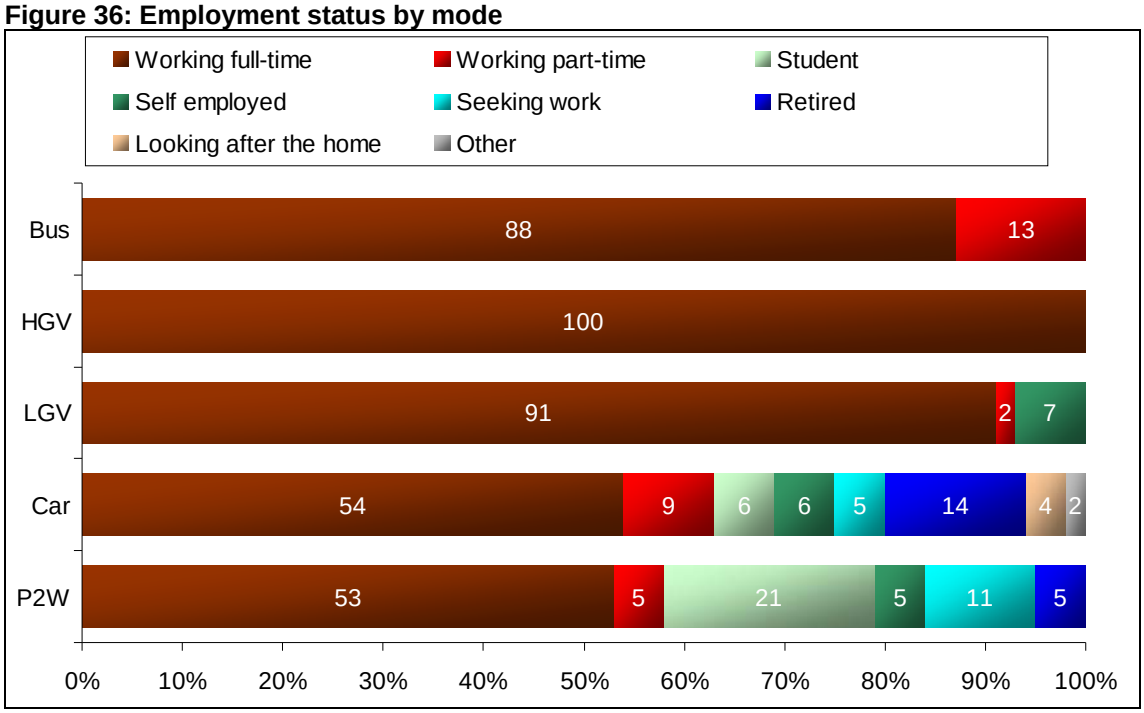
Figure 35: Employment status – all drivers



Base: 407 drivers

All bus, HGV and LGV drivers were employed (as would be expected).

Figure 36: Employment status by mode

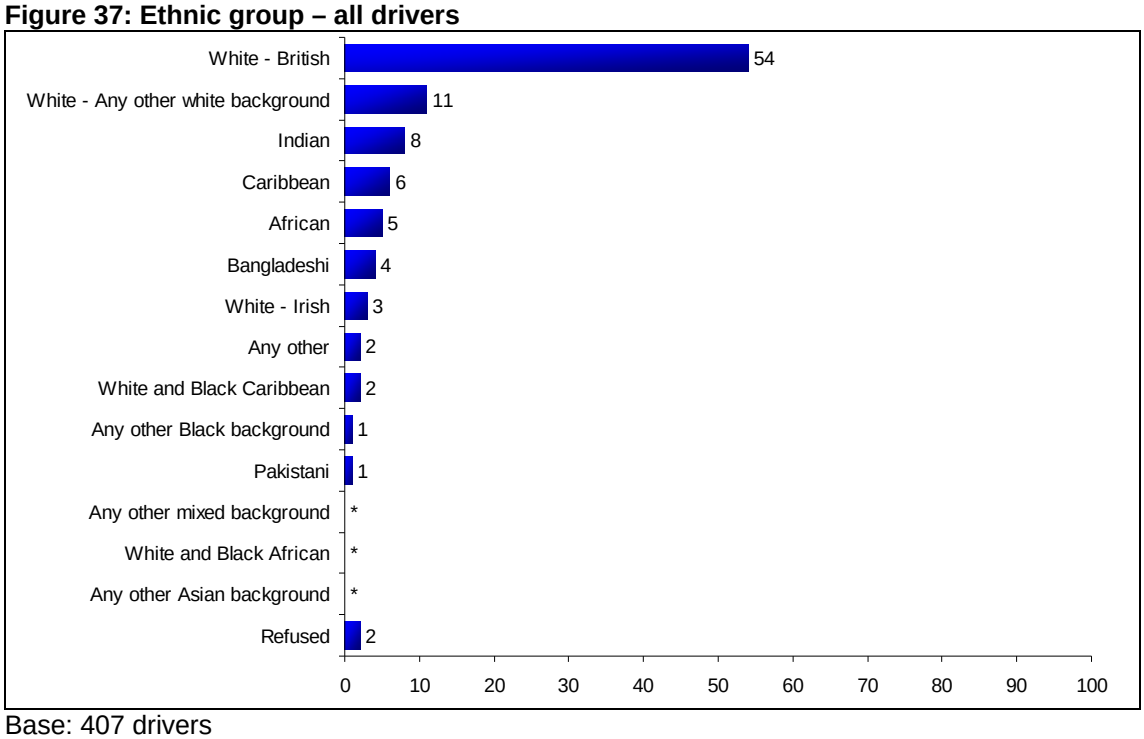


Base: 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

Ethnic Group

White British was the largest ethnic group with just over half (54%) of all drivers in this group.

Figure 37: Ethnic group – all drivers

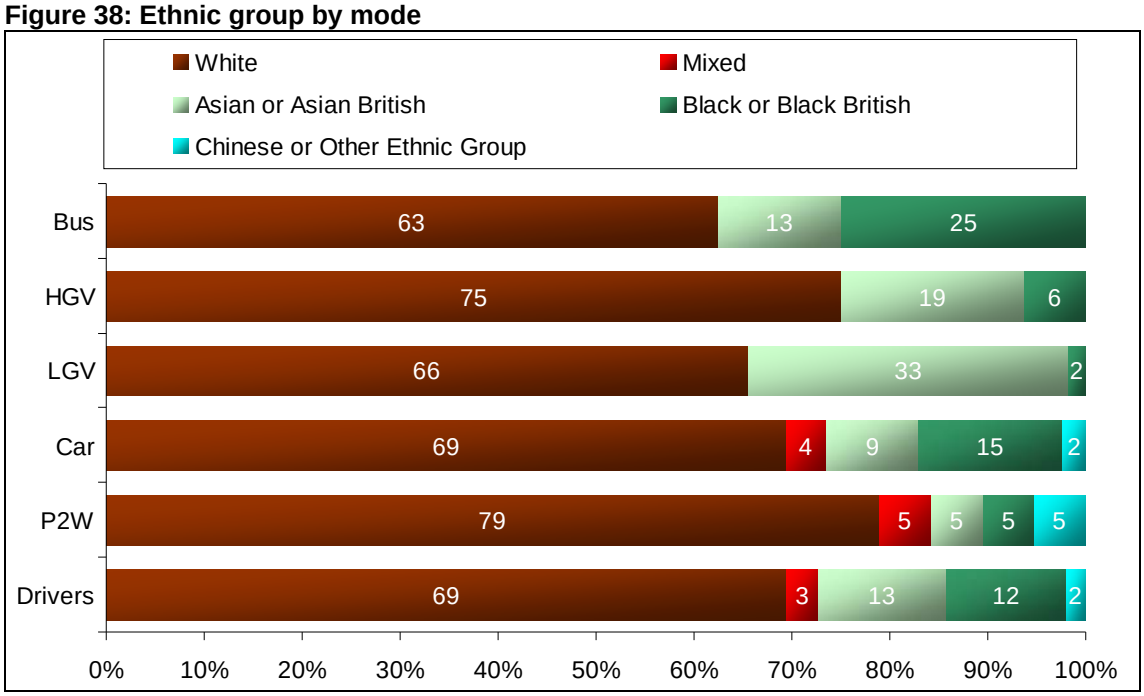


Base: 407 drivers
* = less than 0.5%

Figure 38 shows the main ethnic groupings by mode. Over two thirds of drivers (69%) are White. According to the 2001 Census, 71% of the London population is white.

A third of LGV drivers are Asian and a quarter of bus drivers are Black.

Figure 38: Ethnic group by mode



Base: Total 407 drivers, 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

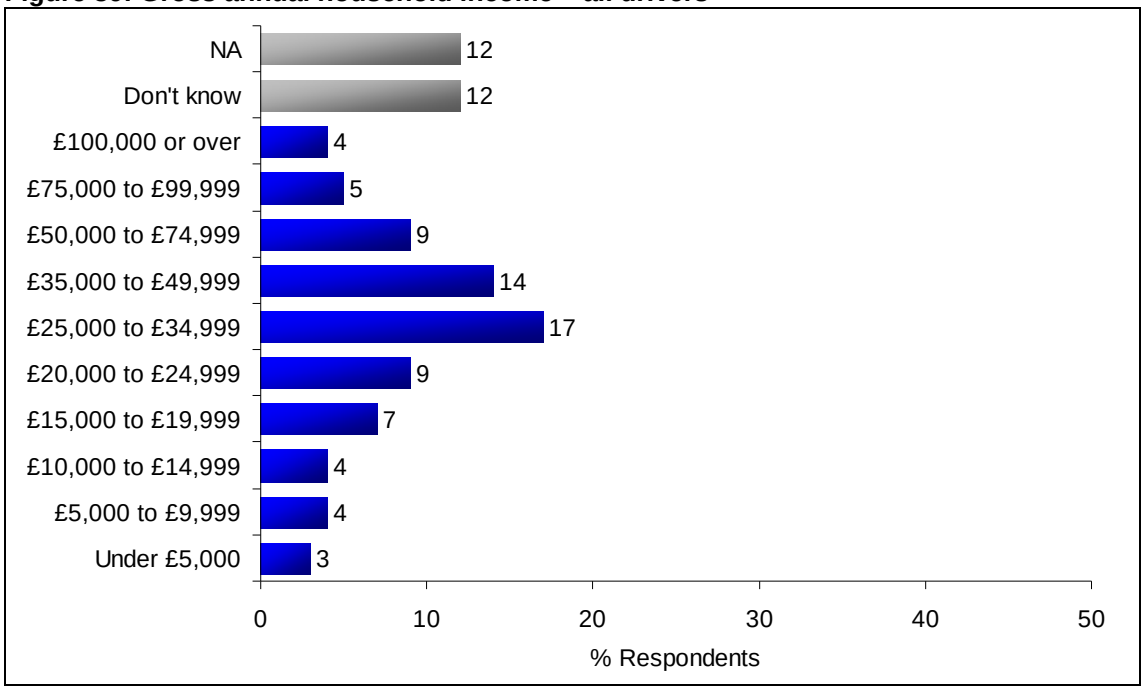
Annual Household Income

Annual household income was probed. Almost a quarter (24%) either refused to answer or said they did not know.

The median income band was £25,000-£34,999 with 17%.

Figure 39 shows the overall distribution of incomes and Figure 40 shows the distribution of incomes banded into three groups after excluding don't knows and refusals by mode.

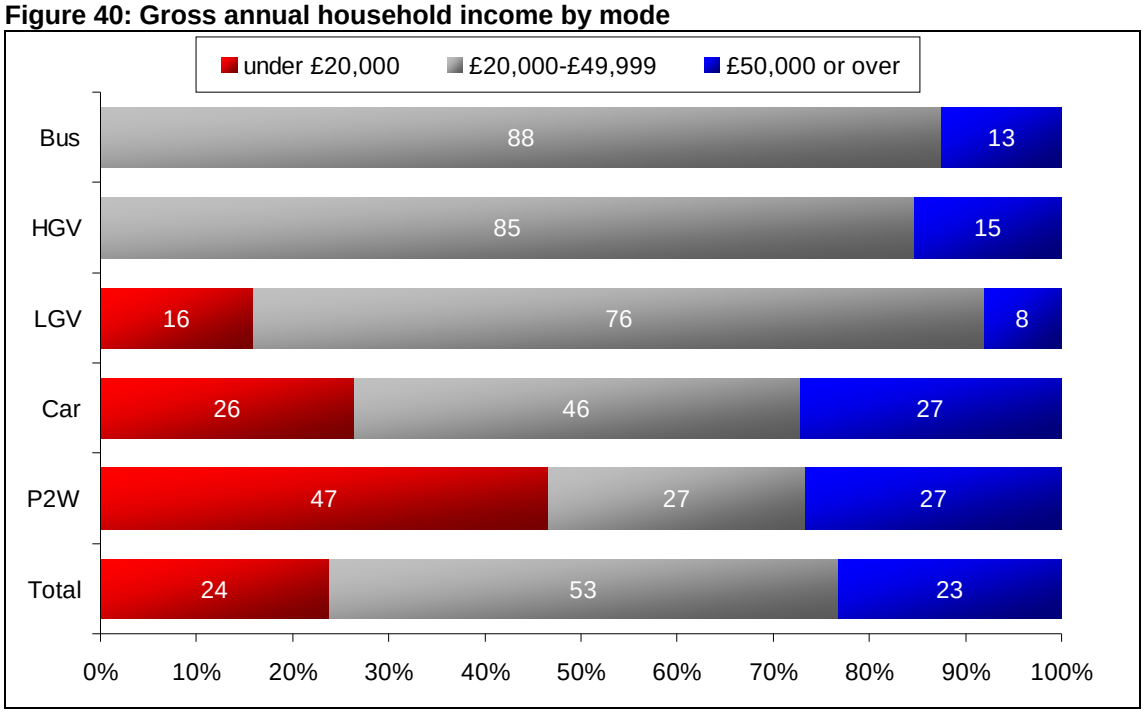
Figure 39: Gross annual household income – all drivers



Base: 407 drivers

P2W drivers had the largest proportion of low income households (47% with annual household incomes under £20,000) as well as the highest proportion (along with car drivers) of high income households (27% with annual household incomes over £40,000).

Figure 40: Gross annual household income by mode



Base: Total 407 drivers, 19 P2W, 306 car, 58 LGV, 816 HGV, 8 bus drivers

4. FINDINGS – CYCLISTS

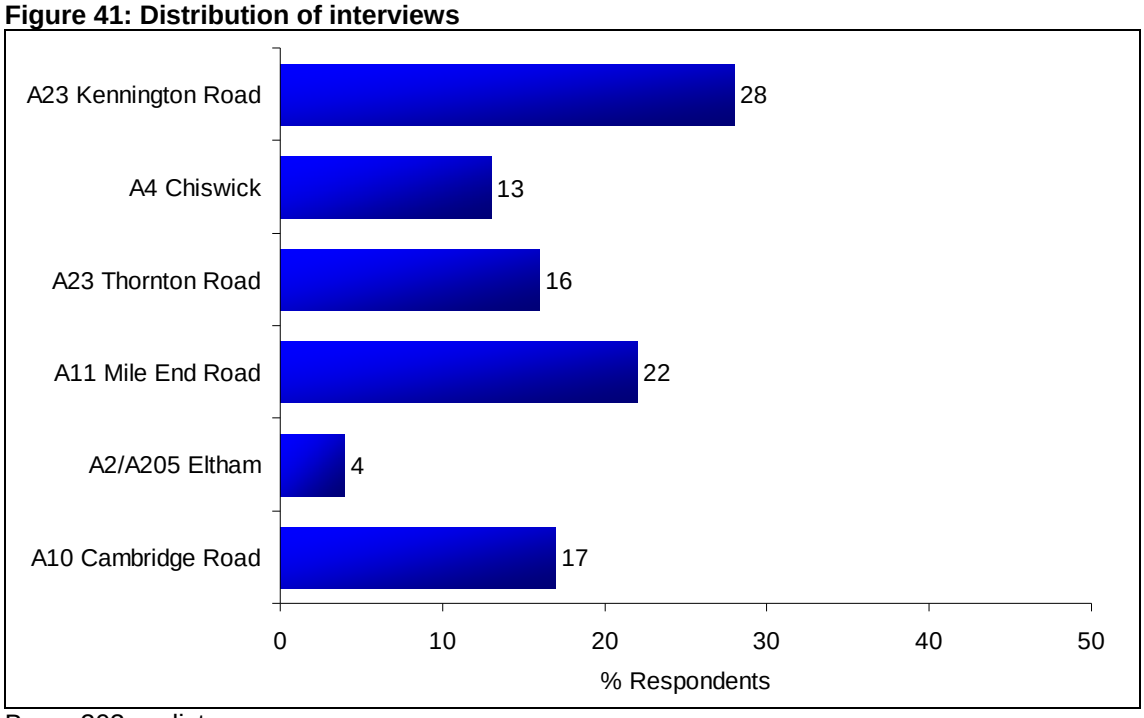
4.1 Introduction

This chapter presents the findings from the Phase 2 main survey for cyclists.

A target of 200 interviews with cyclists was set and 203 achieved

The distribution of interviews by area is shown below.

Figure 41: Distribution of interviews



Base: 203 cyclists

There were minimum age and gender quotas for cyclists.

• Age	minimum target	achieved
– 18-30	25%	34%
– 31-45	40%	37%
– 46-60	15%	22%
– 61+	-	5%
• Gender		
– Female	25%	31%

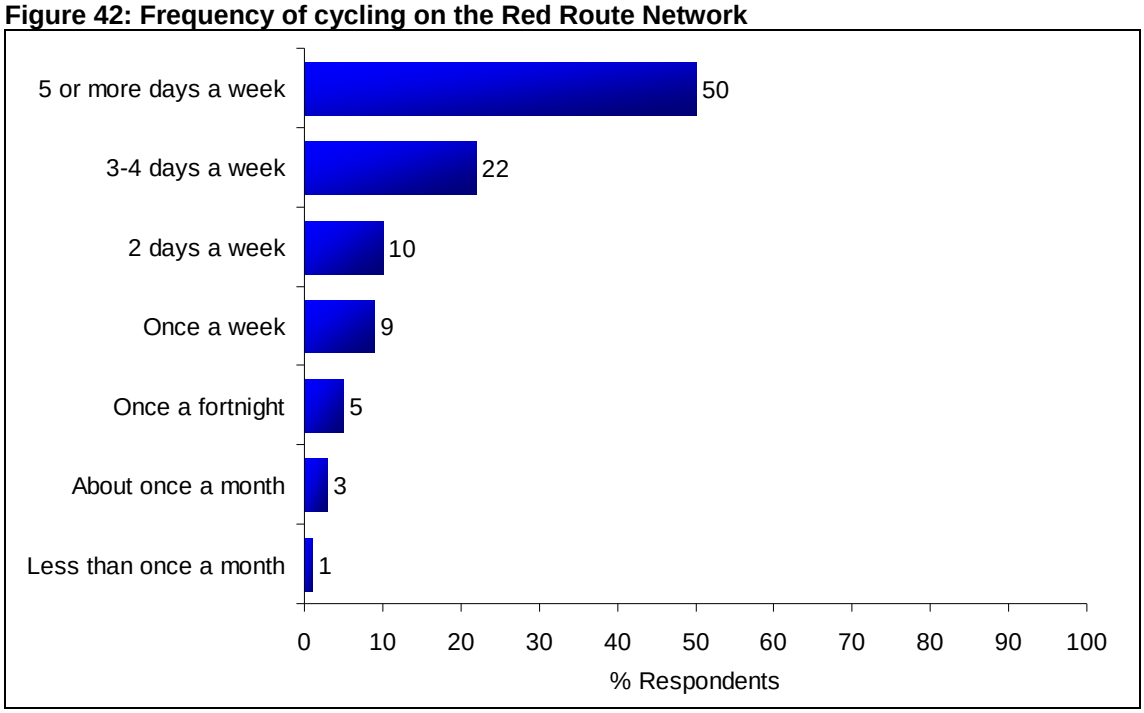
Please note that the age quota breaks do not exactly match the age breaks within the CAPI questionnaire.

4.2 TLRN use

Cyclists were shown a map of the Red Route Network and asked how often they cycled on the Red Route Network.

Half the sample cycled on it five days a week or more with a further 41% doing so between one and four times a week.

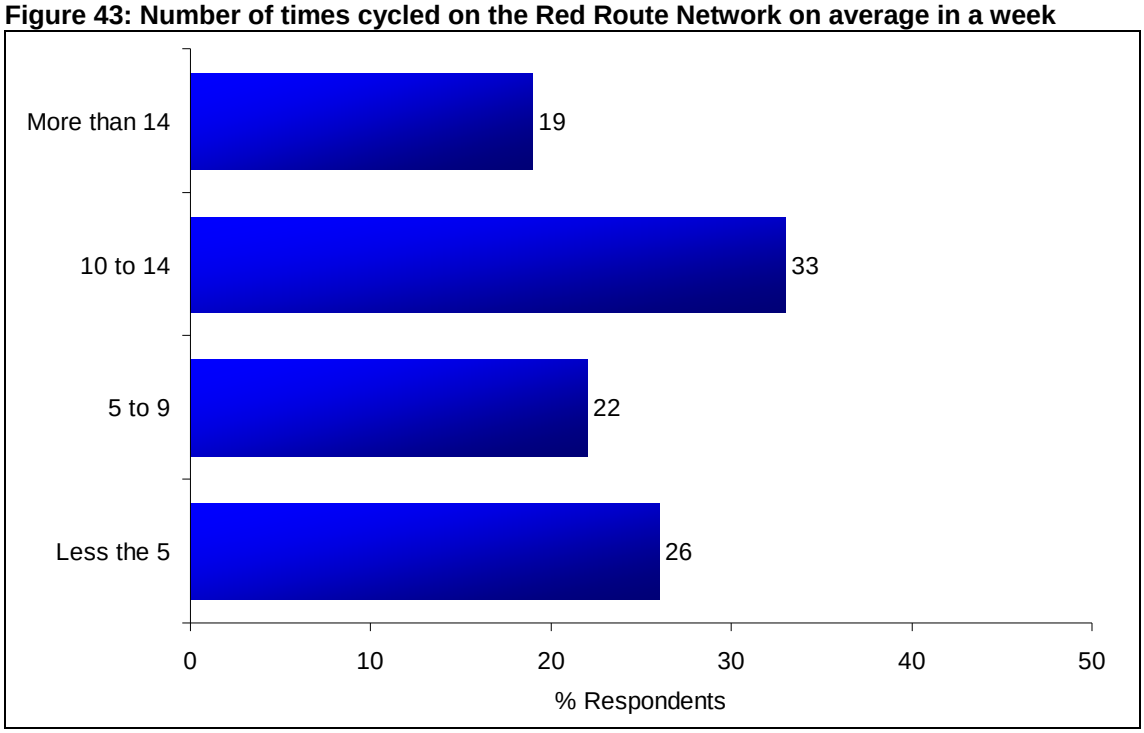
Figure 42: Frequency of cycling on the Red Route Network



Base: 203 cyclists

Cyclists were asked how many times they cycled on the Red Route Network on average in a week. There was a wide distribution with 26% cycling on it less than five times a week and at the other end of the scale, 19% cycling on it more than 14 times.

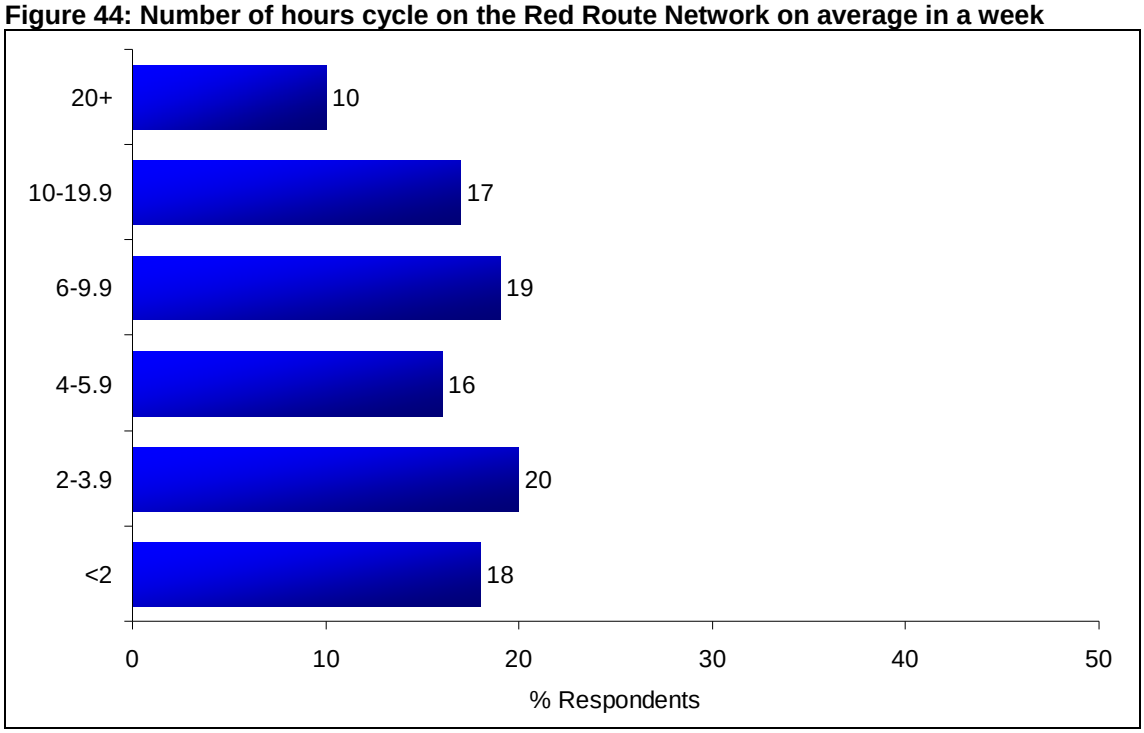
Figure 43: Number of times cycled on the Red Route Network on average in a week



Base: 203 cyclists

The average number of times was 10.94 per week (or a little less than twice a day).
The number of hours that were cycled on the Red Route Network on average in a week was probed. There was a wide distribution with 18% cycling less than two hours a week on one end of the scale, and 10% cycling 20+ hours a week at the other end of the scale.

Figure 44: Number of hours cycle on the Red Route Network on average in a week



Base: 203 cyclists

The average number of hours cycled on the Red Route Network in a week was 8 hours 17 minutes.

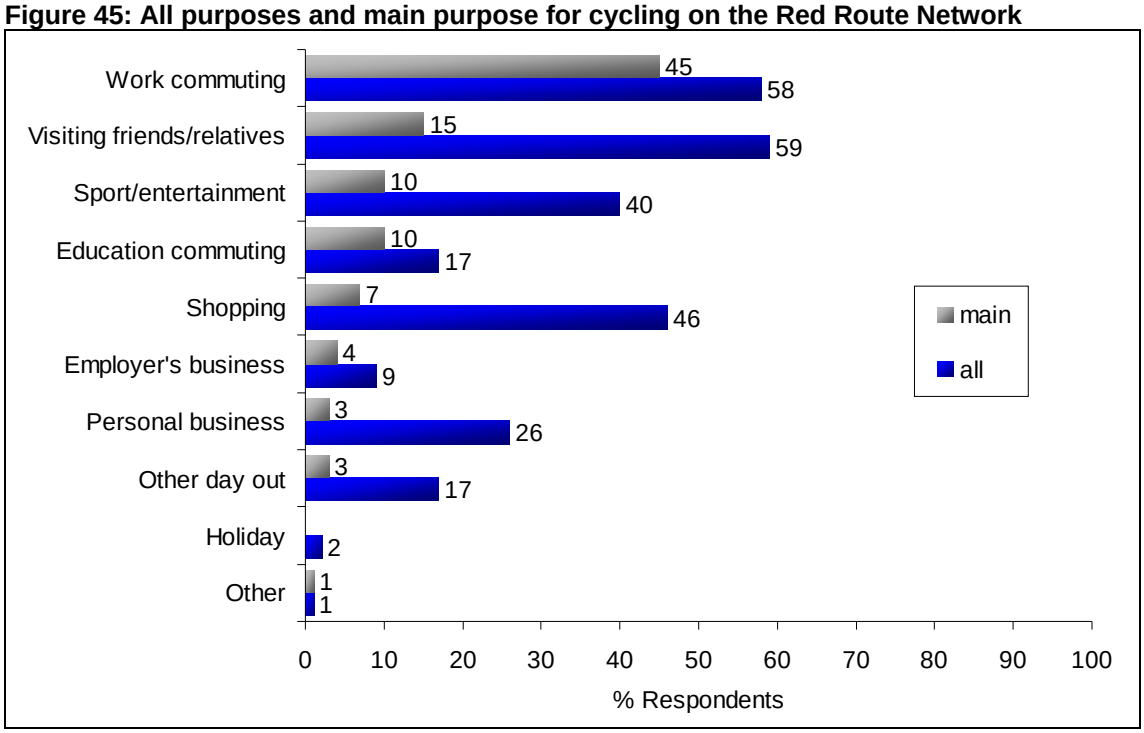
Journey Purpose

Cyclists were asked for which purposes they cycled on the Red Route Network. If more than one purpose was mentioned, they were asked which the main purpose was. Figure 45 shows all purposes and the main purpose for the cycle sample. Overall, 2.75 purposes were mentioned by each respondent.

Visiting friends/relatives and work commuting were the two most important journey purpose, mentioned by 59% and 58% respectively. Almost half (45%) said work commuting was the main purpose.

Almost half (46%) mentioned shopping and 40% mentioned sport/entertainment as purposes for cycling on the Red Route Network, although a relatively small proportion said these were the main purpose: 7% and 10% respectively.

Figure 45: All purposes and main purpose for cycling on the Red Route Network

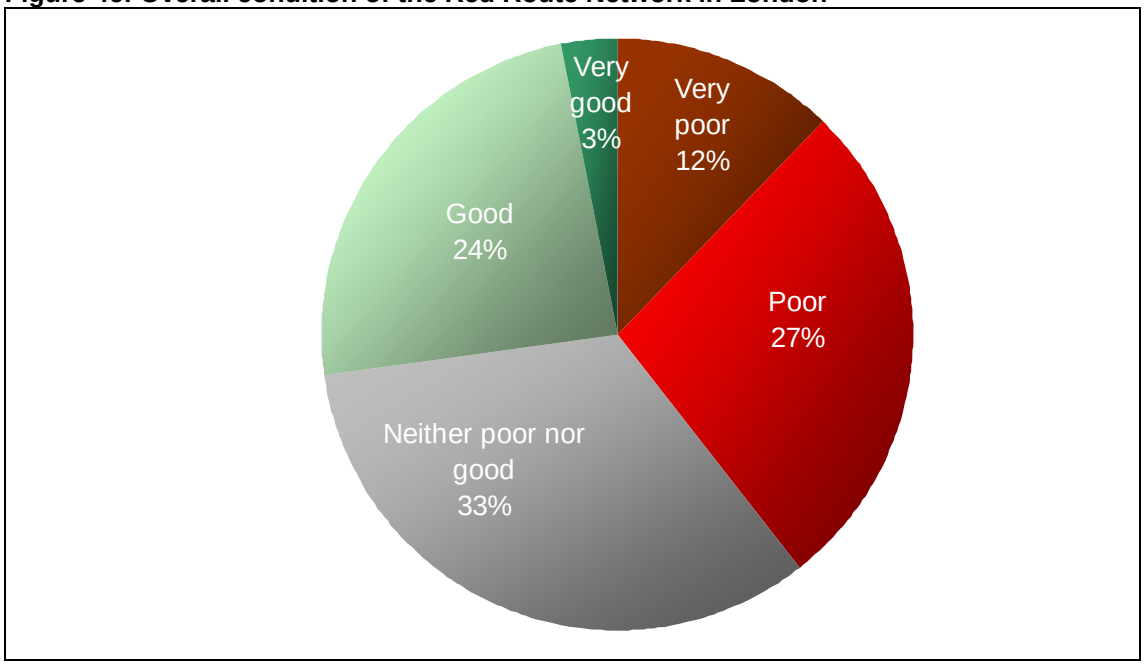


Base: 203 cyclists

4.3 Current Perceptions of Carriageway Condition

On balance, cyclists rated the overall condition of the Red Route Network in London as poor: 39% said it was poor or very poor and 27% said it was good or very good.

Figure 46: Overall condition of the Red Route Network in London

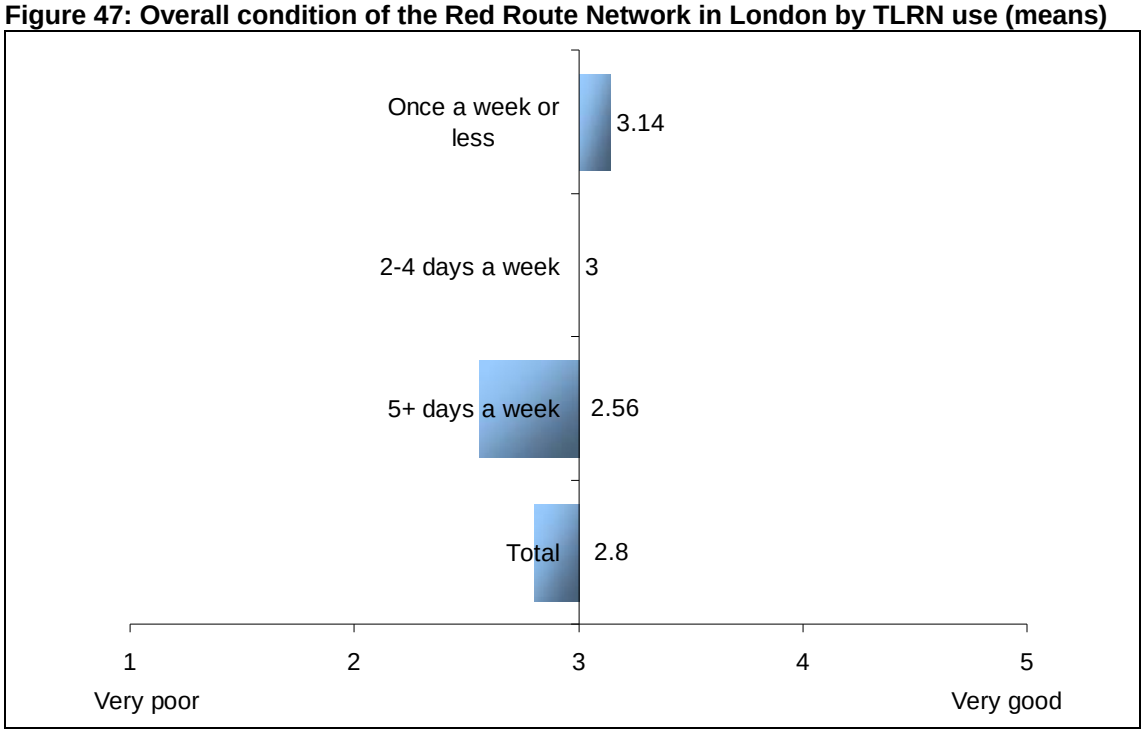


Base: 203 cyclists

Mean rating scores were calculated on the basis of 1 = very poor and 5 = very good. The mean rating was 2.8, lower than the mid point.

Infrequent users rated the condition of the Red Route Network better than frequent users.

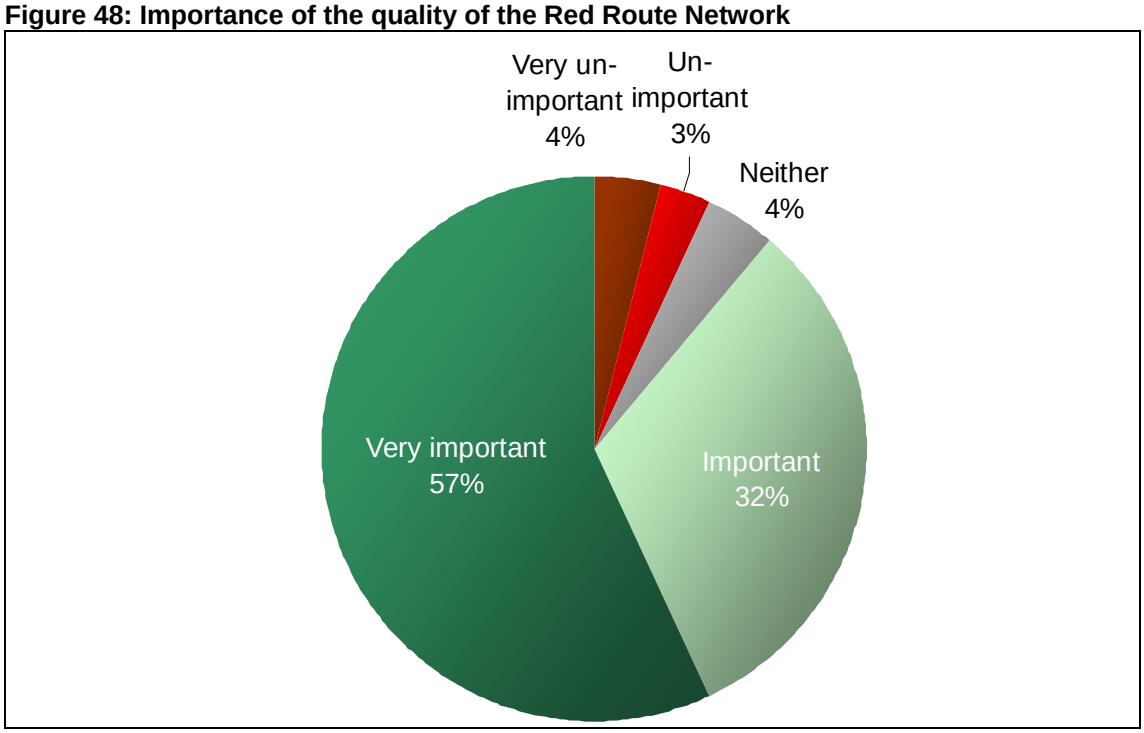
Figure 47: Overall condition of the Red Route Network in London by TLRN use (means)



Base: total: 203 cyclists; TLRN use: 5+ days a week 102, 2-4 days a week 64, Once a week or less 37

The importance of the quality of the Red Route Network to the cyclist was probed. As can be seen from Figure 48, almost nine tenths of cyclists thought it was important: 57% very important and 32% important.

Figure 48: Importance of the quality of the Red Route Network



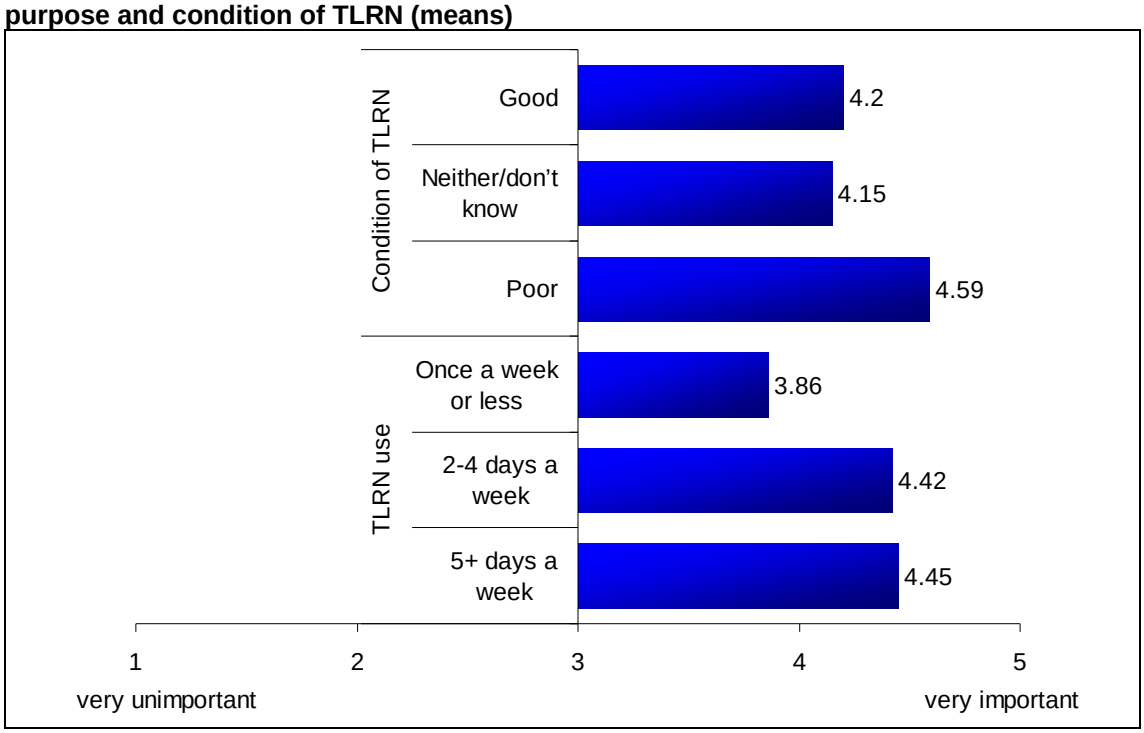
Base: 203 cyclists

Mean rating scores were calculated on the basis of 1 = very unimportant and 5 = very important. The mean rating was 4.33.

The mean importance ratings by frequency of TLRN use and the perceived condition of TLRN are shown in Figure 49.

This shows that the worse the condition of the TLRN the more important the quality and the more frequent the usage the more important the quality.

Figure 49: Importance of the quality of the Red Route Network by TLRN use, main purpose and condition of TLRN (means)



Base: TLRN use: 5+ days a week 102, 2-4 days a week 64, Once a week or less 37; condition of TLRN: poor 79, neither/don't know 68, good 56

4.4 Rating of Carriageway Defects

Cyclists were asked the following two questions for each of eight carriageway condition defects

a) At which level of ……..[4] would you **prefer** TfL to intervene?
b) At which level do you think TfL **must** intervene?

For each, the answer could be given on an 11 point scale:

- 0%
- 10%
- 20%
- 30%
- 40%
- 50%

[4] The relevant condition defect

- 60%
- 70%
- 80%
- 90%
- 100%

Any response not on the scale was rounded, eg 4% was entered as 0% and 15% was entered as 20%.

The order that the carriageway condition defects were presented was randomised.

To assist respondents with answering these questions, the interviewer ran through a dummy example which featured rutting.

Figure 50 to Figure 57 illustrate the responses to each of the two questions for the eight carriageway condition defects.

Rutting

Rutting was described as follows:

> *"Rutting is depression of the carriageway surface in the vehicle wheel path."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

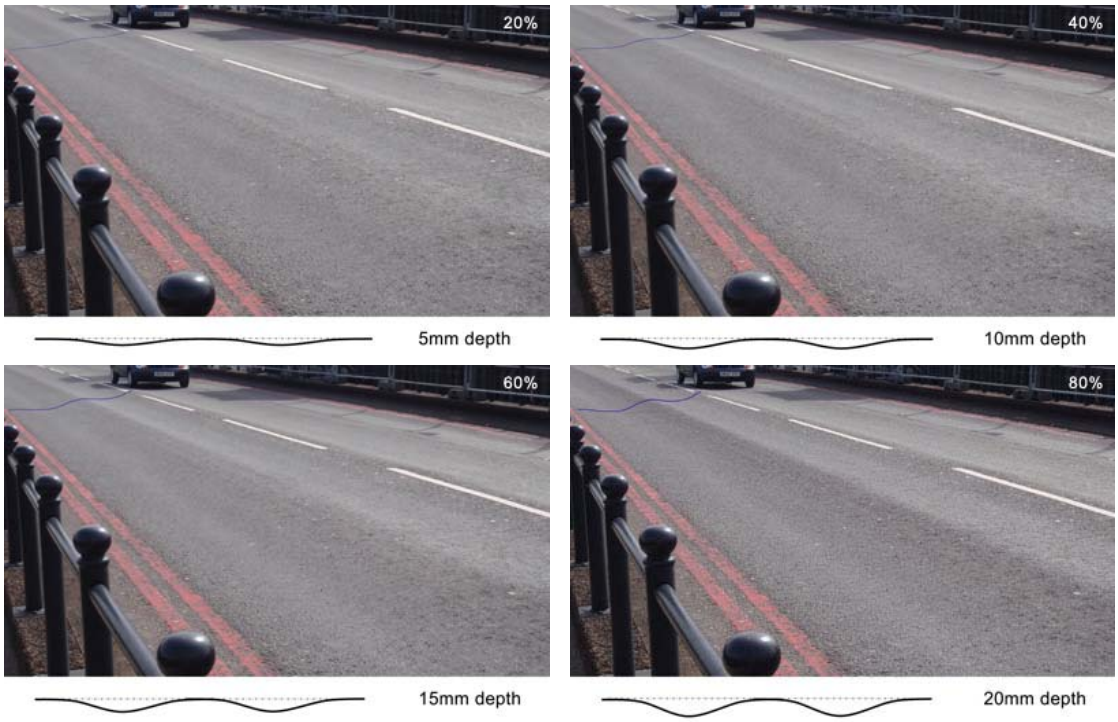
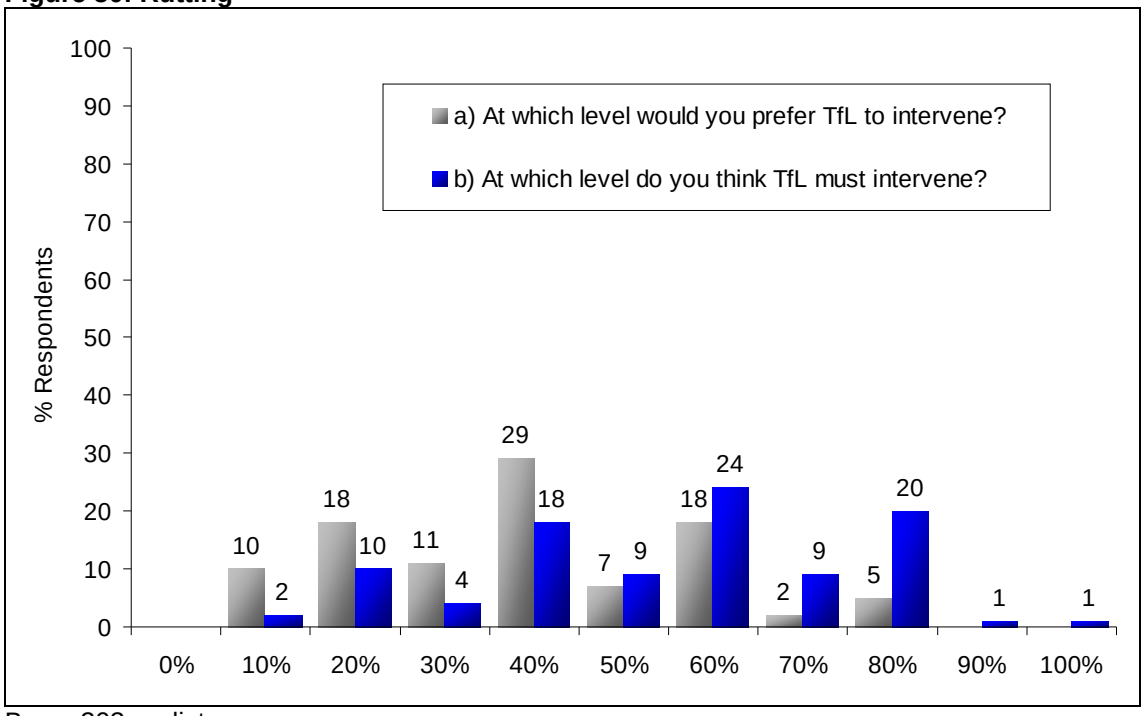


Figure 50: Rutting



Base: 203 cyclists

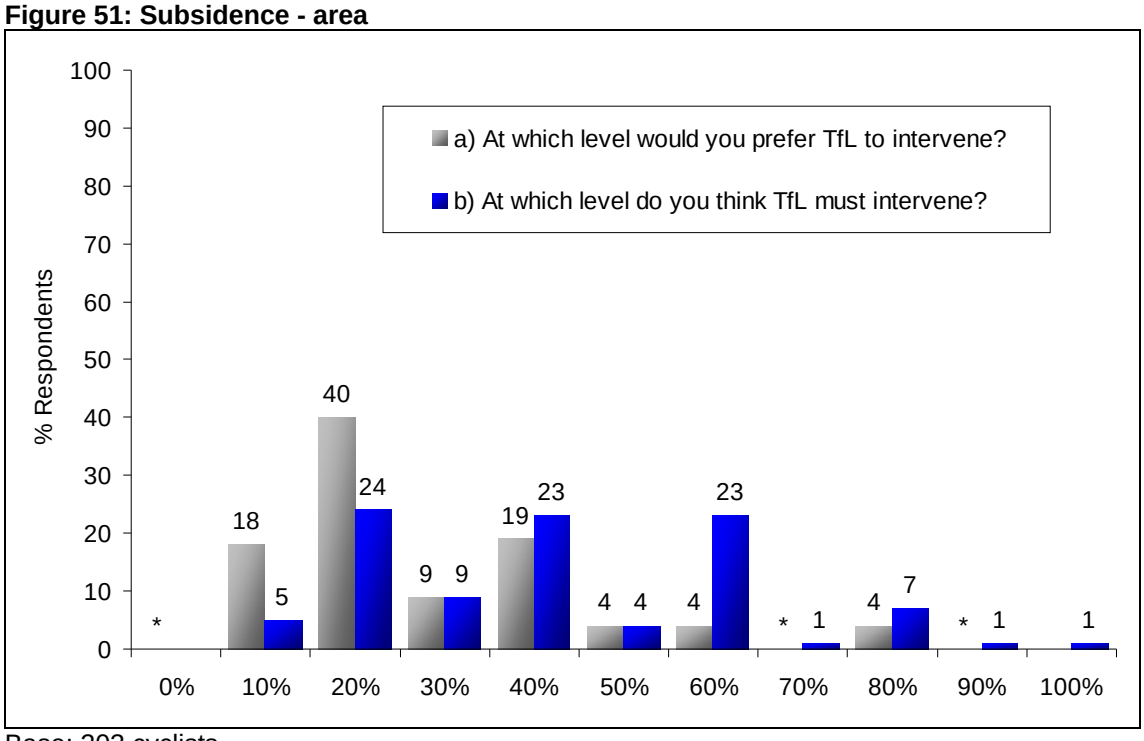
Subsidence – area

Subsidence – area was described as follows:

"Subsidence is where part of the carriageway subsides to a lower level."

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 51: Subsidence - area



Base: 203 cyclists
* = less than 0.5%

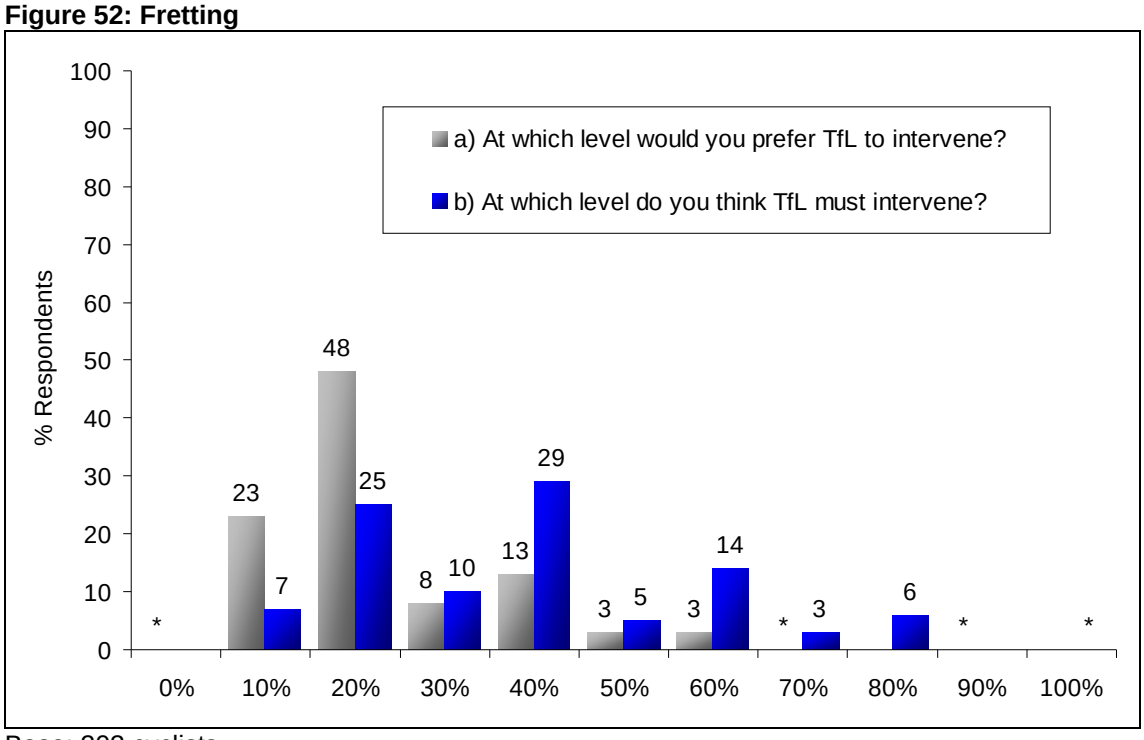
Fretting

Fretting was described as follows:

> *"Fretting is where the carriageway surface breaks up."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 52: Fretting



Base: 203 cyclists
* = less than 0.5%

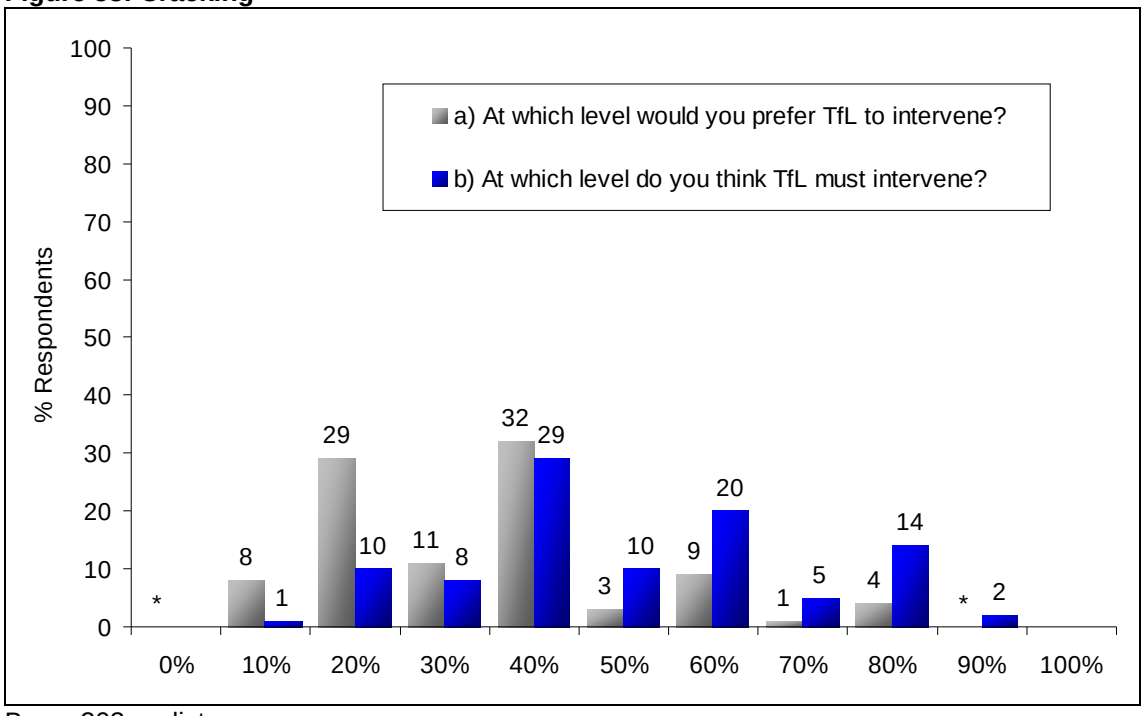
Cracking

Cracking was described as follows:

> *"Cracking – cracks on the carriageway surface."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 53: Cracking



Base: 203 cyclists
* = less than 0.5%

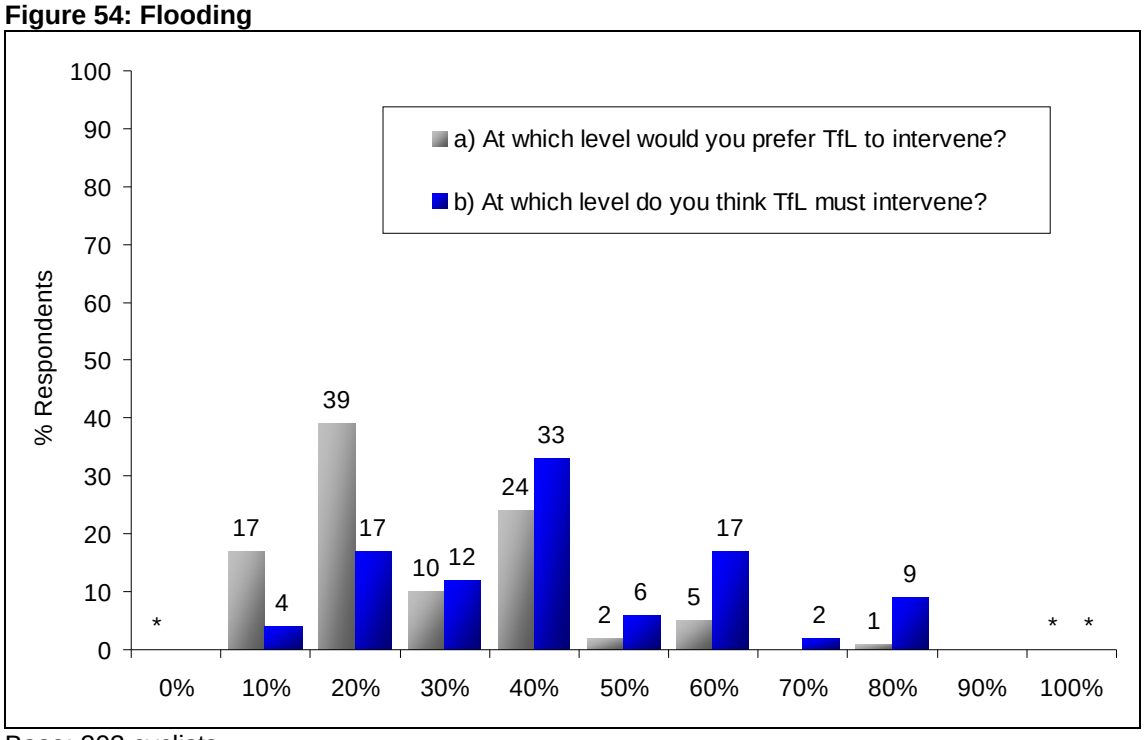
Flooding

Flooding was described as follows:

> *"Flooding is where parts of the carriageway remain under water after rain."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 54: Flooding



Base: 203 cyclists
* = less than 0.5%

Ironworks

Ironworks was described as follows:

> *"Ironworks is where ironwork is raised or sunken."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

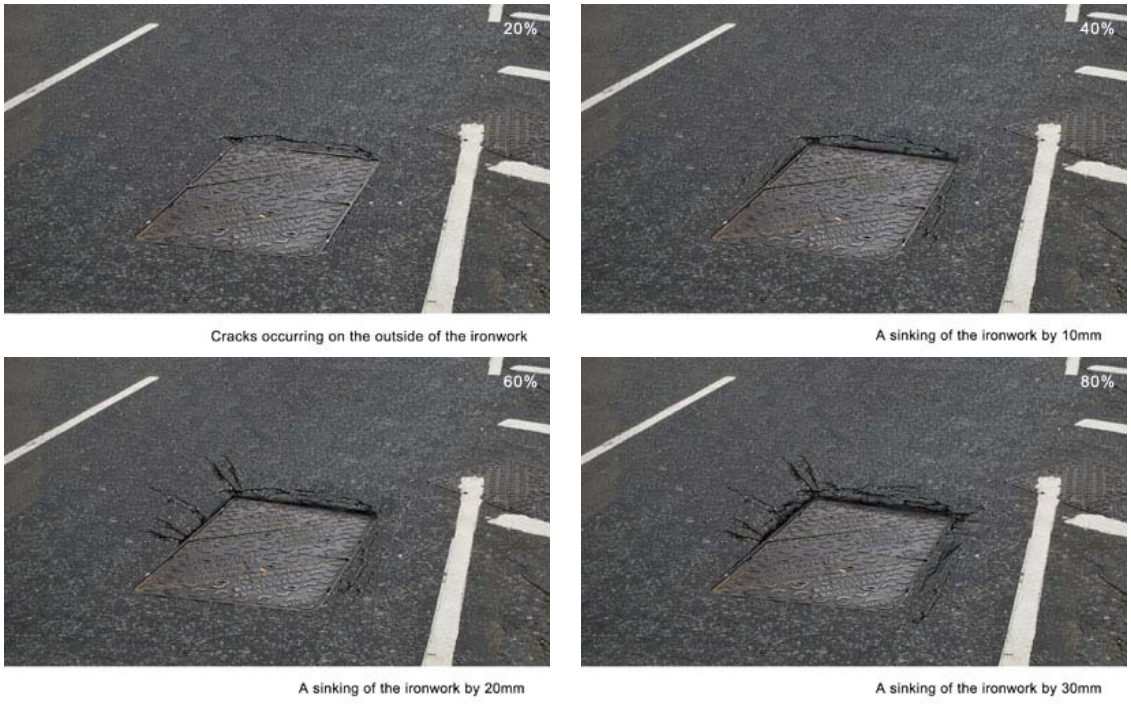
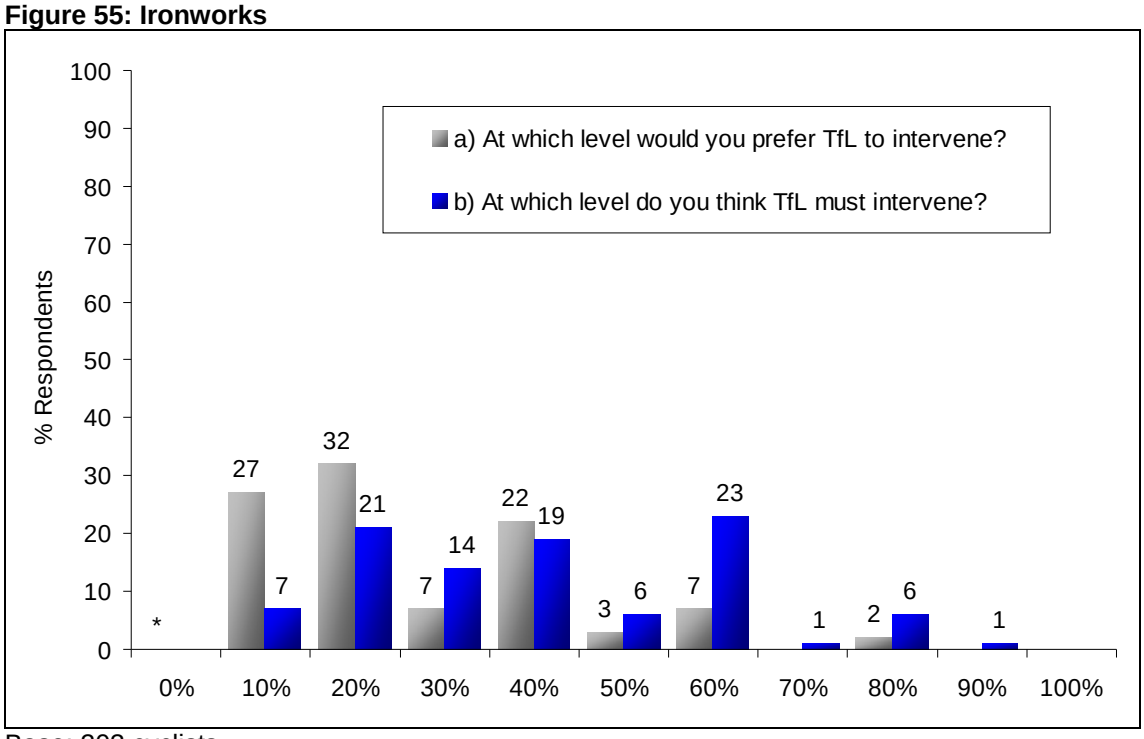


Figure 55: Ironworks



Base: 203 cyclists
* = less than 0.5%

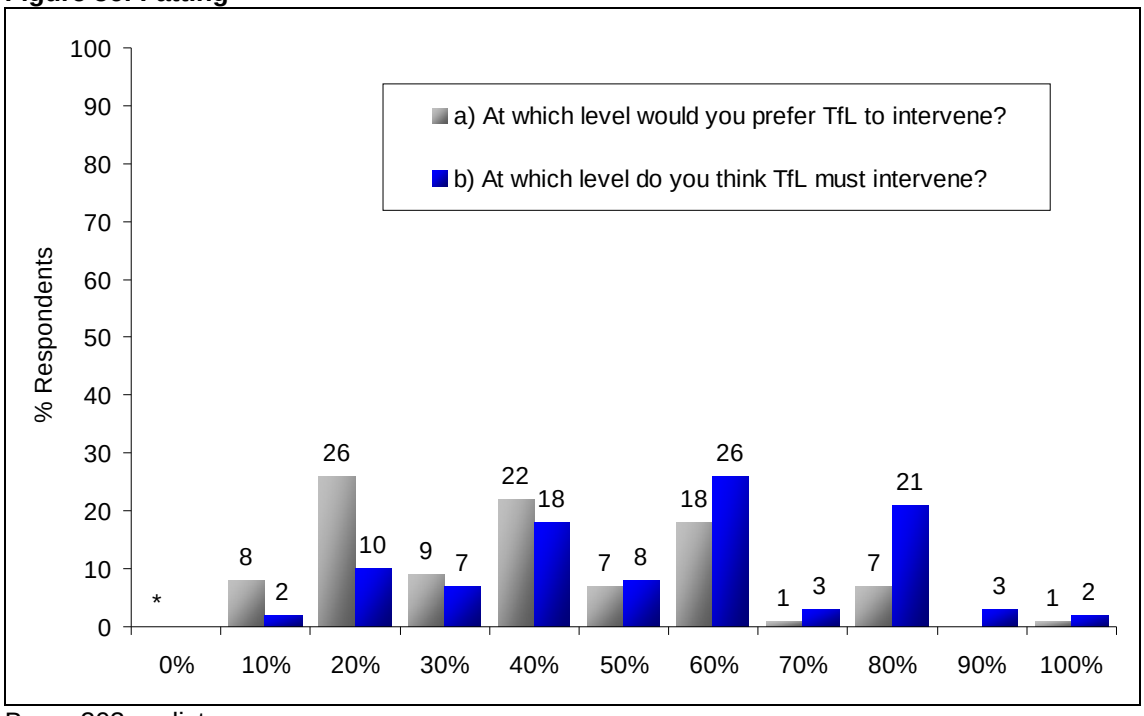
Fatting

Fatting was described as follows:

> *"Fatting is a loss of surface texture on the carriageway."*

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

Figure 56: Fatting



Base: 203 cyclists
* = less than 0.5%

Subsidence – depth

Subsidence – depth was described as follows:

"Subsidence is where part of the carriageway subsides to a lower level."

The following images illustrating 20%, 40%, 60% and 80% condition defects were shown.

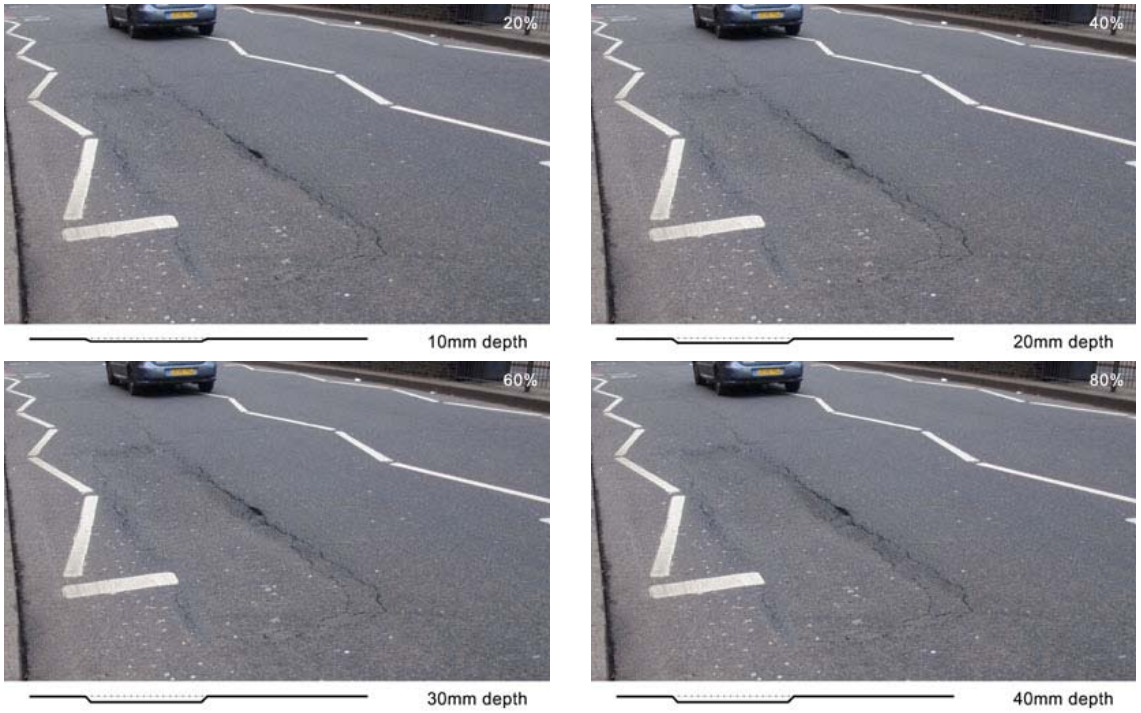
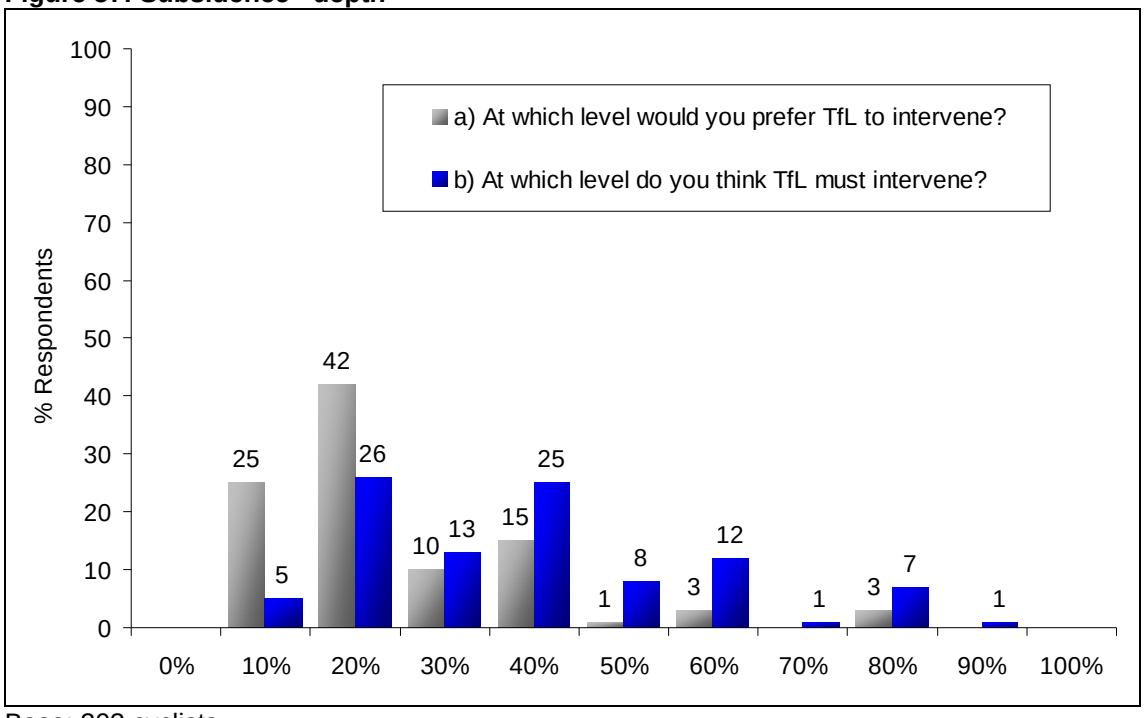


Figure 57: Subsidence - depth

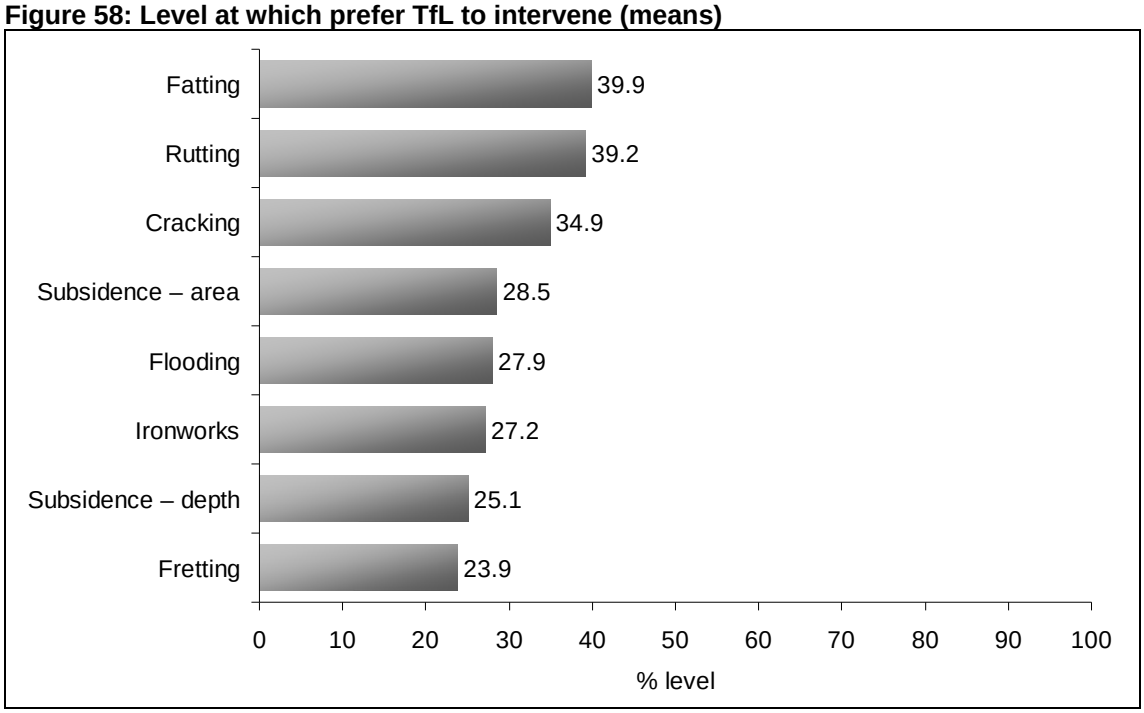


Base: 203 cyclists

For all eight carriageway condition defects there was a tendency for there to be a higher level for 'TfL must intervene' than for 'prefer TfL to intervene' as would be expected.

The mean levels for 'prefer TfL to intervene' are shown in Figure 58. The lower the level the worse the condition defect. Fretting and subsidence – depth are the priorities for cyclists.

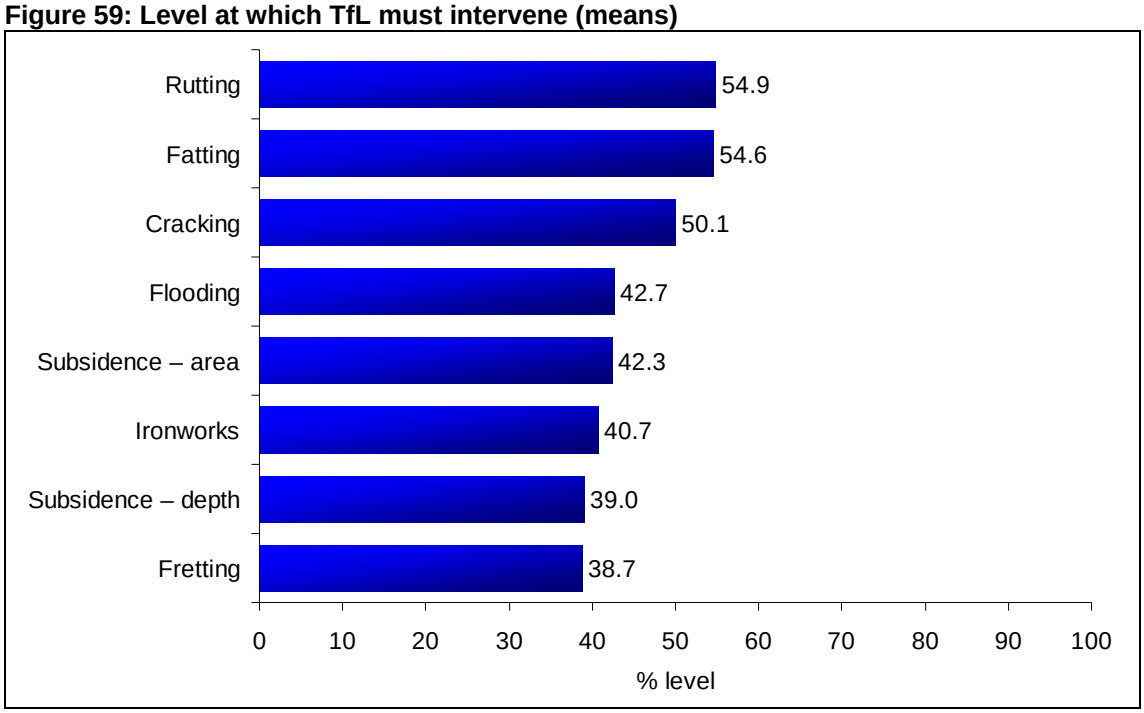
Figure 58: Level at which prefer TfL to intervene (means)



Base: 203 cyclists

The mean levels for 'TfL must intervene' are shown in Figure 59. The lower the level the worse the condition defect. Fretting and subsidence – depth are again the priorities for cyclists.

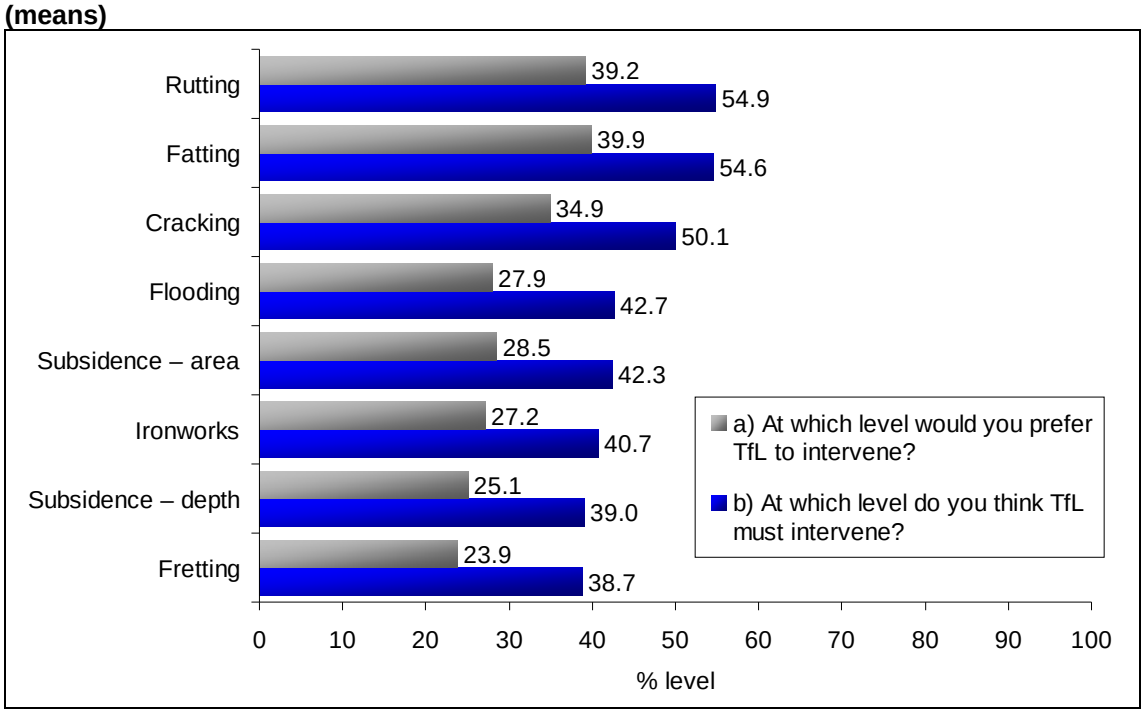
Figure 59: Level at which TfL must intervene (means)



Base: 203 cyclists

These are combined in Figure 60 (ranked in order of 'TfL must intervene'). The gap between the preferring TfL to intervene and TfL must intervene ranges from 13.5% to 15.7% with an average of 14.5%

Figure 60: Levels at which prefer TfL to intervene and at which TfL must intervene (means)



Base: 203 cyclists

Table 2 shows the means and standard deviations (SD) for the levels at which cyclists would prefer TfL to intervene and at which they think TfL must intervene.

Table 2: Levels at which prefer TfL to intervene and at which TfL must intervene (means and standard deviations (SD))

Rutting		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**39.2** 18.6
At what level do you think TfL must intervene?	**mean** SD	**54.9** 20.9
Subsidence – area		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**28.5** 17.7
At what level do you think TfL must intervene?	**mean** SD	**42.3** 21.2
Fretting		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**23.9** 13.8
At what level do you think TfL must intervene?	**mean** SD	**38.7** 19.3
Cracking		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**34.9** 18.0
At what level do you think TfL must intervene?	**mean** SD	**50.1** 19.2
Flooding		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**27.9** 15.5
At what level do you think TfL must intervene?	**mean** SD	**42.7** 19.0
Ironworks		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**27.2** 16.8
At what level do you think TfL must intervene?	**mean** SD	**40.7** 20.0
Fatting		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**39.9** 21.3
At what level do you think TfL must intervene?	**mean** SD	**54.6** 22.1
Subsidence – depth		
At what level of defect would you prefer TfL to intervene?	**mean** SD	**25.1** 15.6
At what level do you think TfL must intervene?	**mean** SD	**39.0** 19.6
Base		**203**

4.5 Diagnostics

A series of questions were asked to check whether respondents found the photos to be clear and understood the key questions on intervention.

Ninety eight per cent said the photos were clear to them. The two per cent (five respondents) who found one or more photos unclear were asked which photos they found unclear. The photos of rutting were the most likely to be found unclear with four of the five mentioning this.

The numbers and percentages (of the whole cycle sample) are shown below.

	n	%
• Rutting	4	1.9
• Fatting	2	0.9
• Cracking	2	0.9
• Flooding	1	0.4
• Fretting	0	na
• Subsidence - depth	0	na
• Subsidence - area	0	na
• Ironworks	0	na

On average, 1.8 photos were unclear for these five respondents.

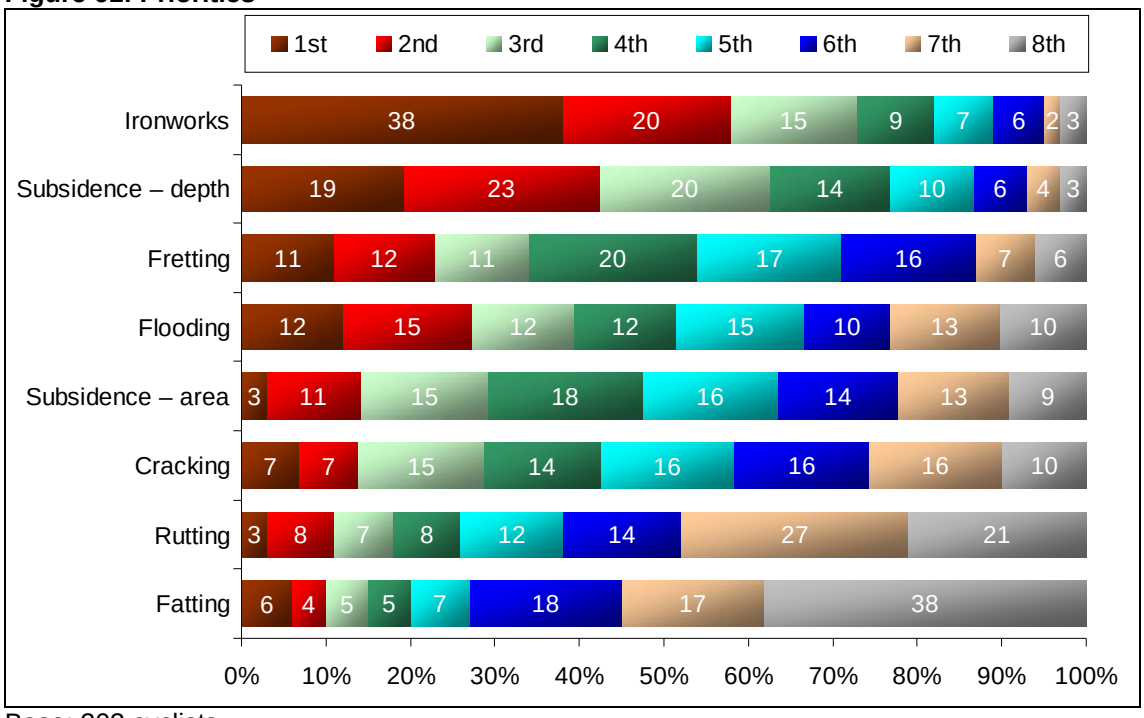
Respondents were asked whether it was clear what they were being asked when they were asked "at what defect % would you **prefer** TfL to intervene" and "at what defect % do you think TfL **must** intervene."

In both cases, all respondents said it was clear. Overall, the images and key questions worked well.

4.6 Priorities

Respondents were asked to rank the condition defects in terms of priority for improvements. Figure 61 below shows the scores and Figure 62 shows the mean priorities (where 8 = highest priority and 1 = lowest priority). The ranking for both figures is based on the means.

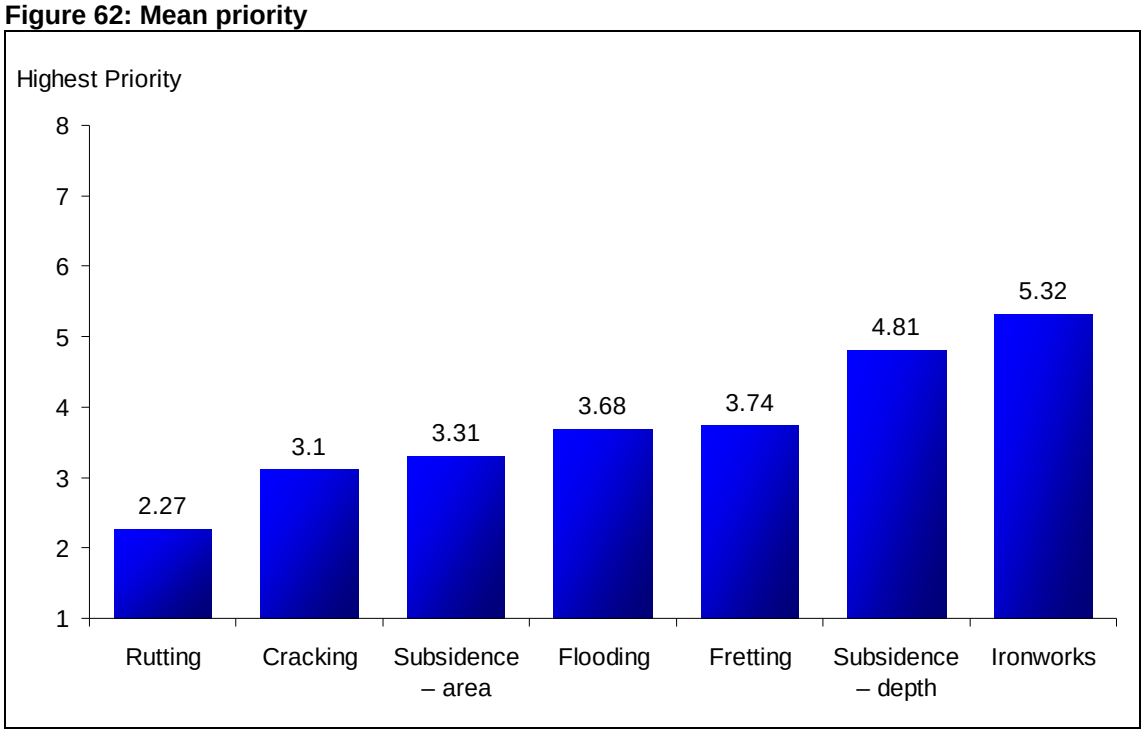
Figure 61: Priorities



Base: 203 cyclists

The top priority is ironworks followed by and subsidence – depth and fretting. These fairly closely match the responses to the questions on TfL intervening.

Figure 62: Mean priority



Base: 203 cyclists

4.7 Comments

Following the questions on priorities respondents were asked:

> *"Do you have any other comments you would like to make on the condition of the Transport for London road network?"*

Sixty per cent made comments. These are included in Appendix D.

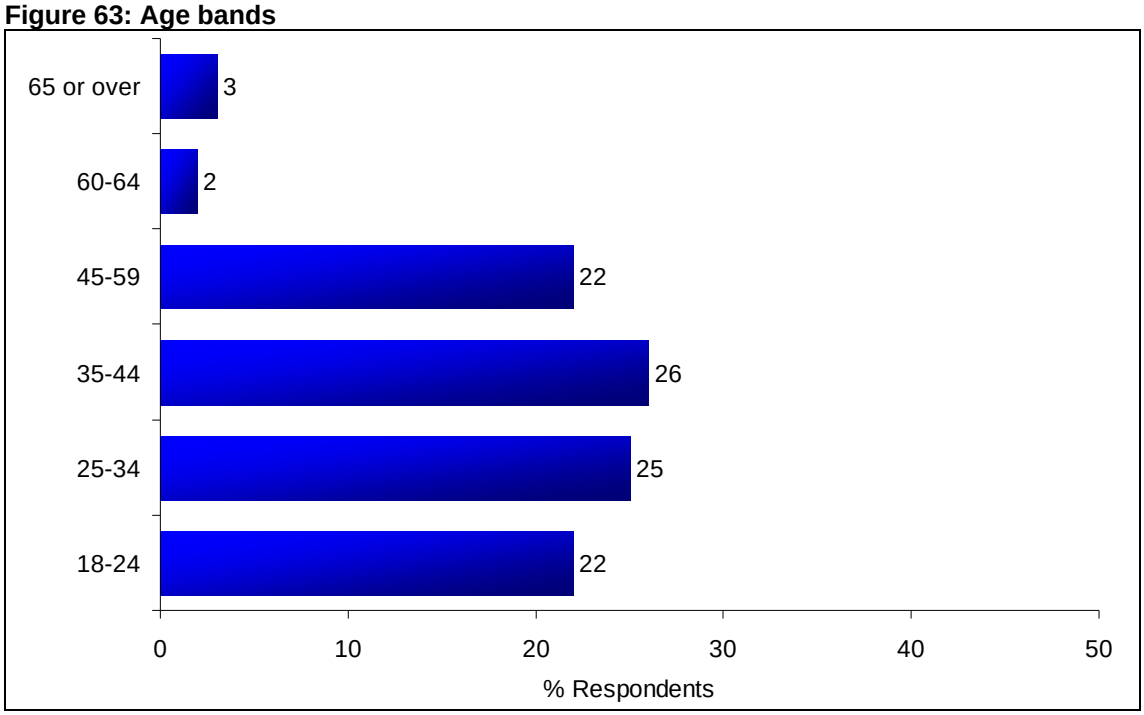
Eleven per cent of the comments concerned potholes, including comments that potholes were missing from the research.

4.8 Respondent characteristics

Age

There were age quotas for cyclists. The age distribution is shown in Figure 63. There was a fairly even spread of cyclists in the four age bands between 18 and 59 years old.

Figure 63: Age bands

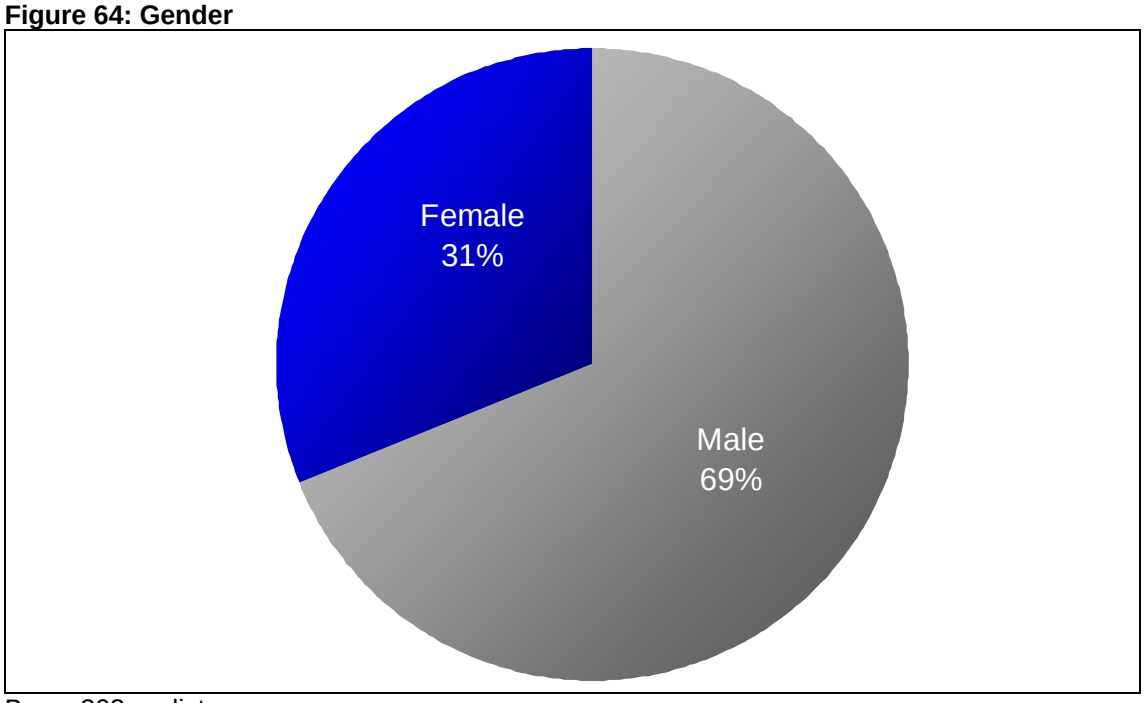


Base: 203 cyclists

Gender

There were gender quotas for cyclists. Over two thirds of cyclists (69%) were male.

Figure 64: Gender

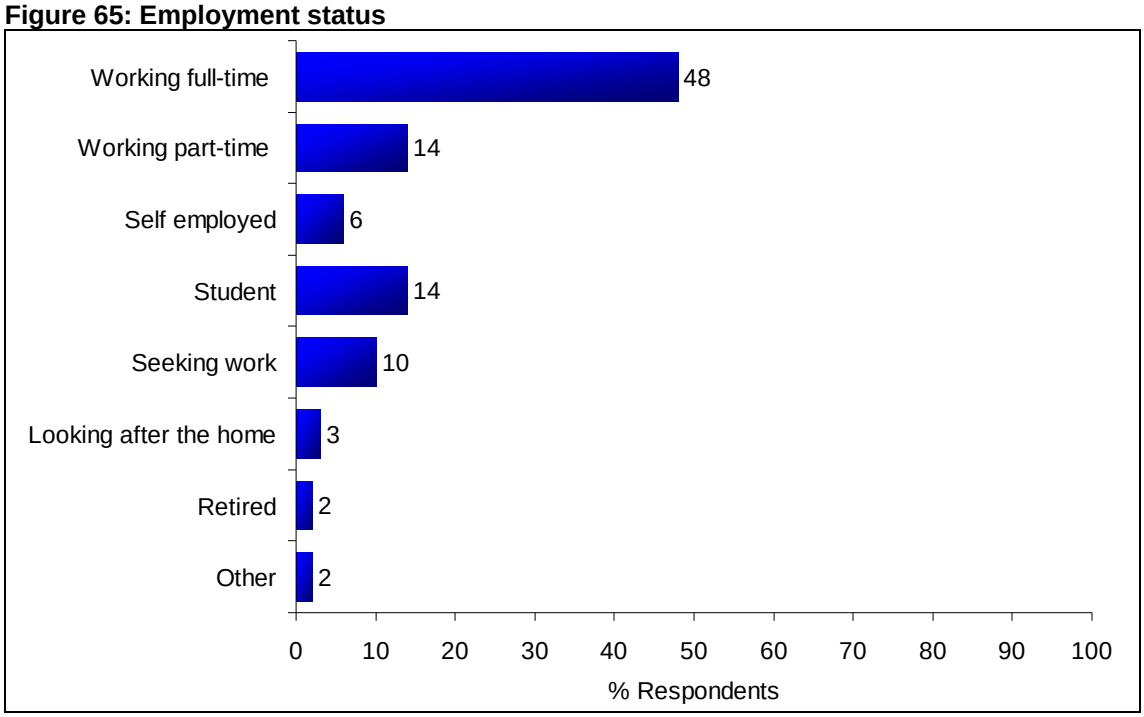


Base: 203 cyclists

Employment status

Over two thirds (68%) of cyclists were employed: 48% full time and 14% part time and 6% self-employed. Fourteen per cent were students 10% were seeking work.

Figure 65: Employment status

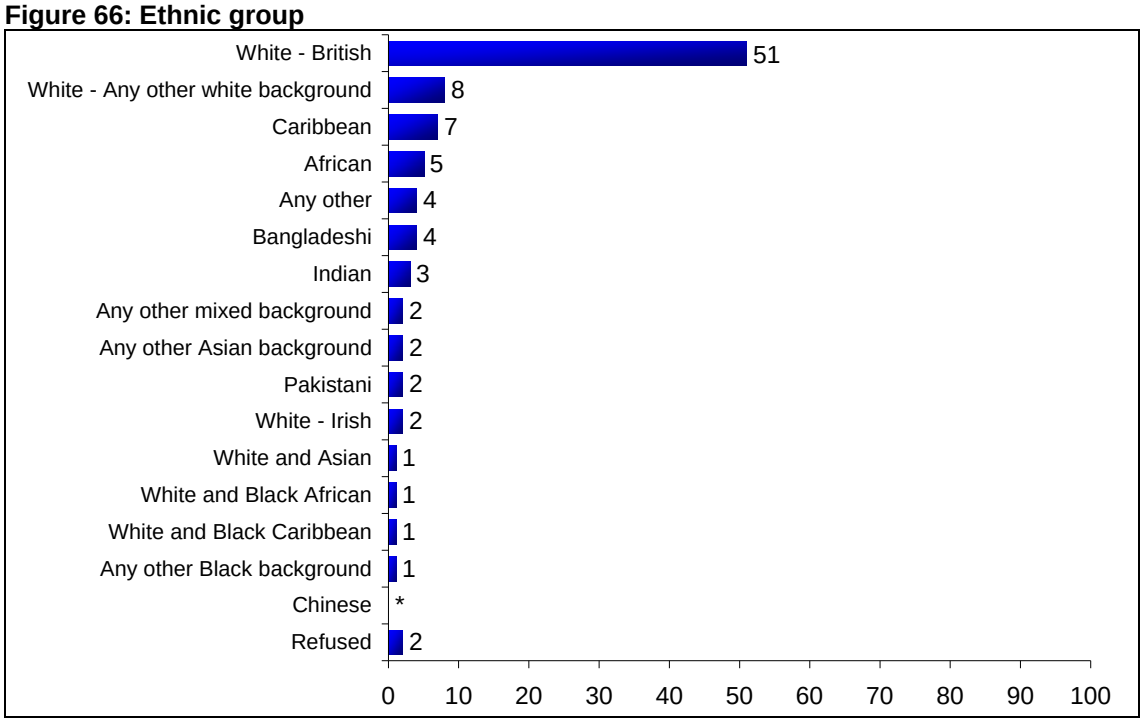


Base: 203 cyclists

Ethnic Group

White British was the largest ethnic group with just over half (51%) of all cyclists in this group.

Figure 66: Ethnic group

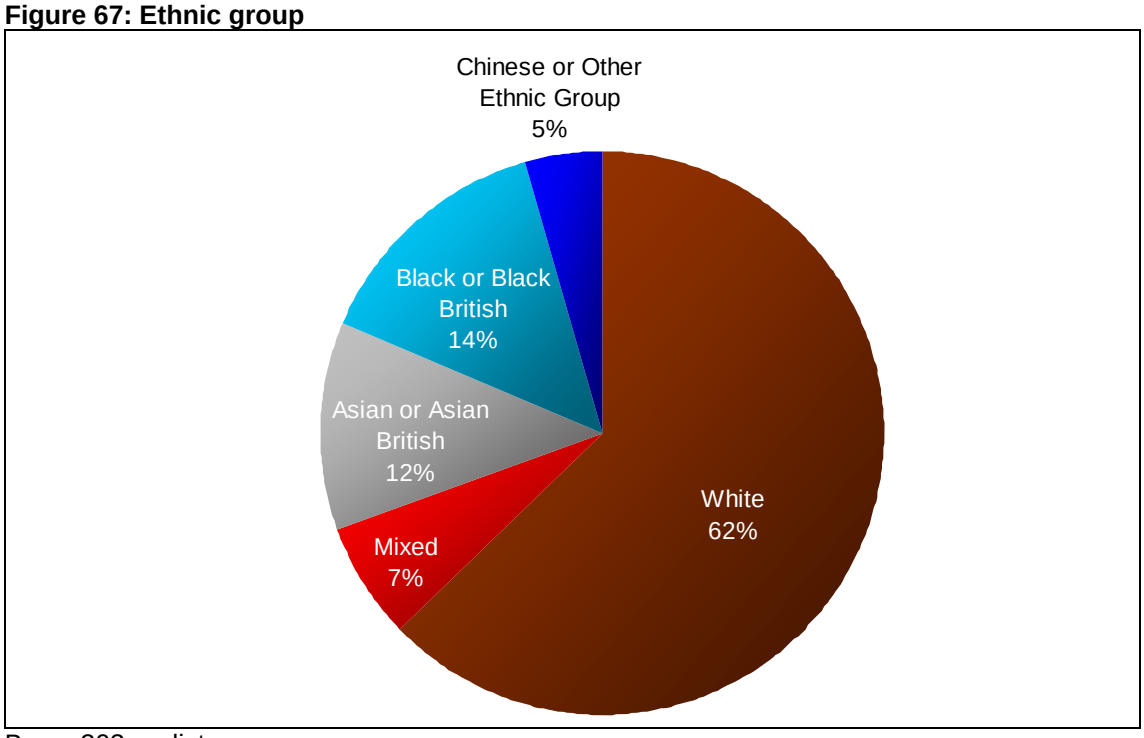


Base: 203 cyclists
* = less than 0.5%

Figure 67 shows the main ethnic groupings. Sixty two per cent are White. According to the 2001 Census, 71% of the London population is white.

A third of LGV drivers are Asian and a quarter of bus drivers are Black.

Figure 67: Ethnic group



Base: 203 cyclists

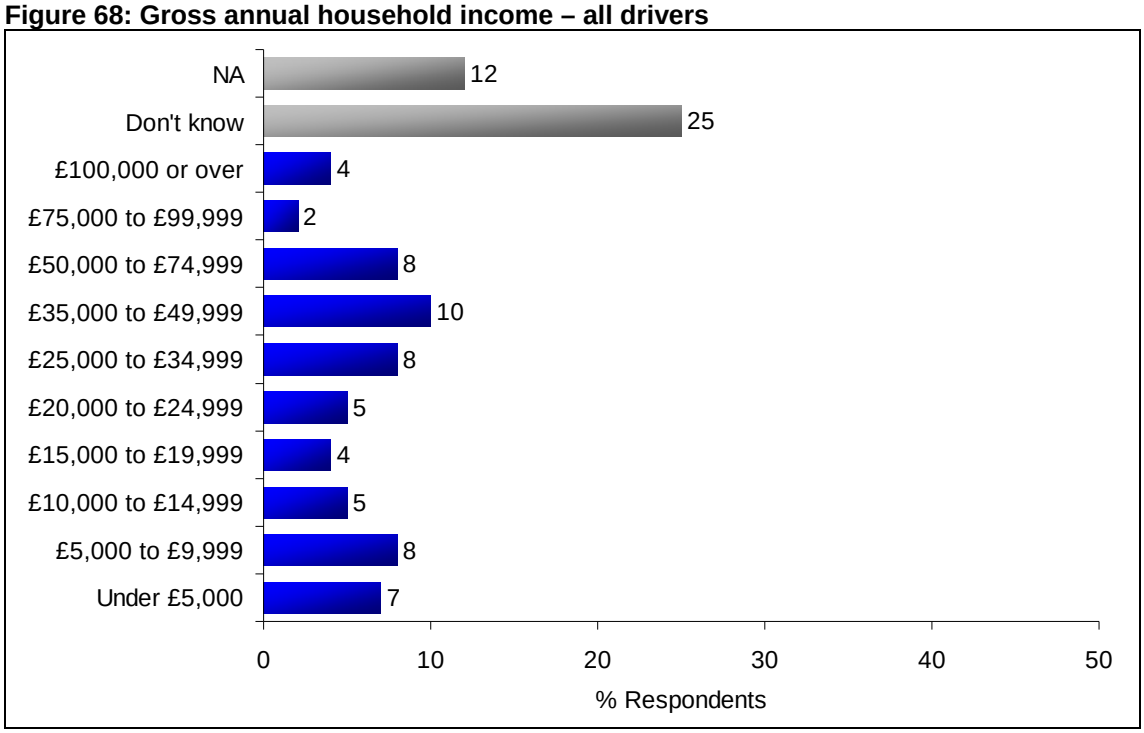
Annual Household Income

Annual household income was probed. Over a third (37%) either refused to answer or said they did not know.

The median income band was £35,000-£49,999 with 10%.

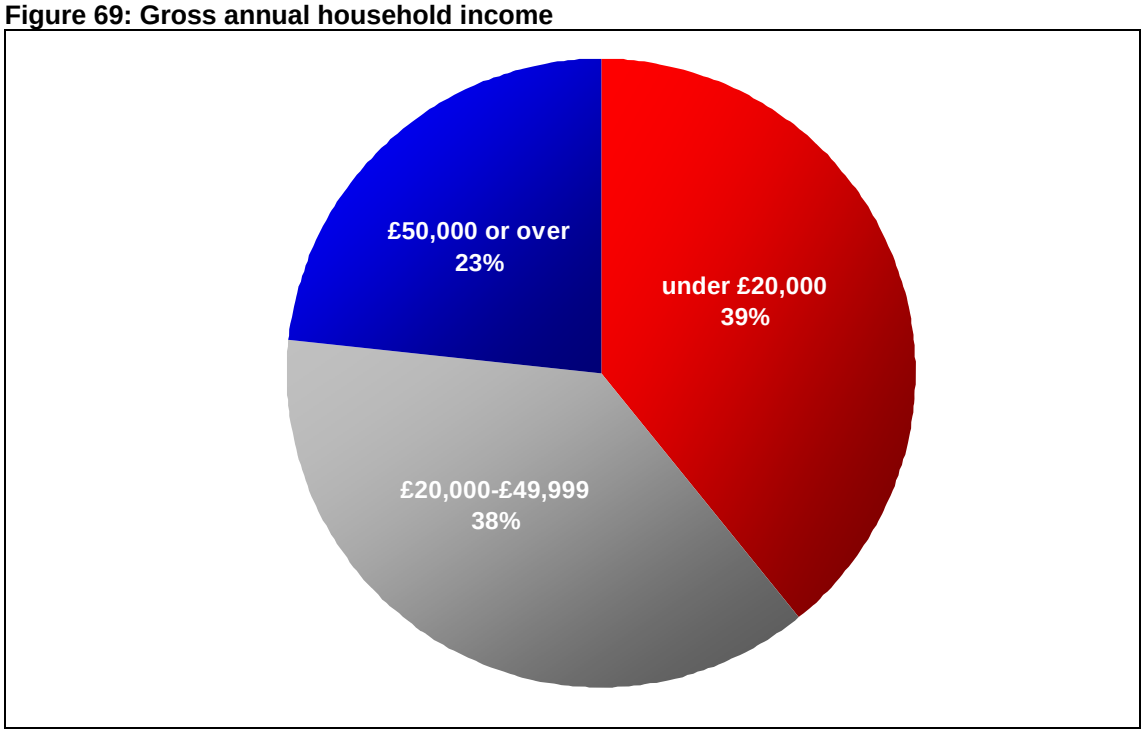
Figure 68 shows the overall distribution of incomes and Figure 69 shows the distribution of incomes banded into three groups after excluding don't knows and refusals.

Figure 68: Gross annual household income – all drivers



Base: 203 cyclists

Figure 69: Gross annual household income



Base: 203 cyclists

APPENDIX A

Paper Version of CAPI Questionnaire

Interviewer no:

Time interview started:

LOCATION:
1. A10 Cambridge Road
2. A2/A205 Eltham
3. A11 Mile End Road
4. A23 Thornton Road
5. A4 Chiswick
6. A23 Kennington Road

INTERVIEWER: CODE RESPONDENT TYPE:
1. Cyclist
2. Powered 2-Wheeler (P2W, motorbike, moped) driver
3. Car driver
4. LGV (Light Goods Vehicle) driver
5. HGV (Heavy Goods Vehicle) driver
6. Bus driver

USE:
IF RESPONDENT TYPE = 1 USE = cycle
IF RESPONDENT TYPE = 2-6 USE = drive
USE2:
IF RESPONDENT TYPE = 1 USE2 = cycling
IF RESPONDENT TYPE = 2-6 USE2 = driving
TYPE:
IF RESPONDENT TYPE = 1 TYPE = cyclists
IF RESPONDENT TYPE = 2-6 TYPE = drivers

Recruitment

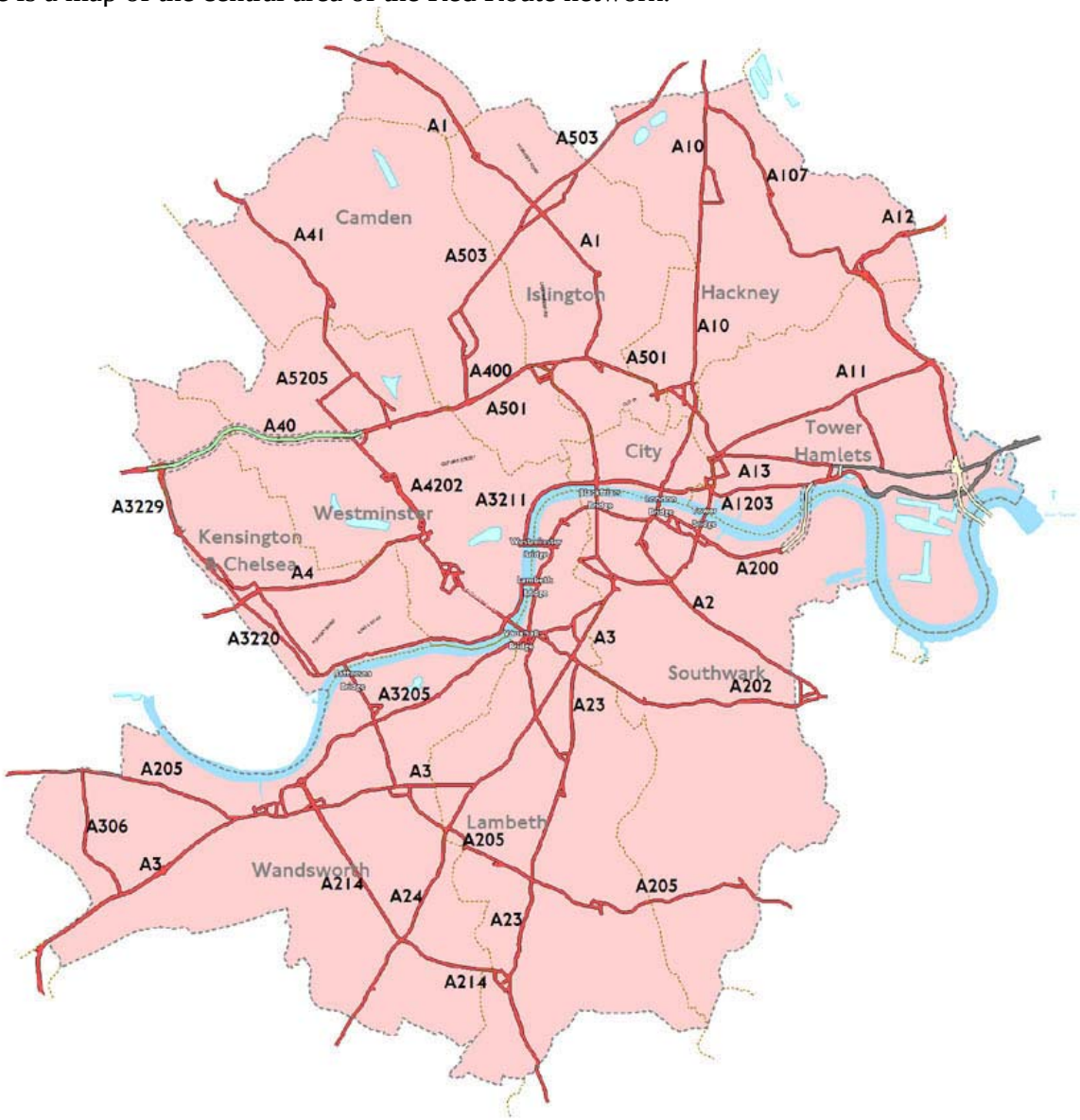
Thankyou for agreeing to undertake this interview for Transport for London with regards to carriageways in London. Any answers you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society. The questionnaire will take about 15 minutes. You do not have to answer questions you do not wish to and you can terminate the interview at any point

QA **IF RESPONDENT TYPE = 3 ASK:** Do you own your car or is it a company car?
I own the car
It is a company car
Other

QB **IF RESPONDENT TYPE = 4 ASK:** Do you own your van or is it a company van?
I own the van
It is a company van
Other

Q1. Transport for London is responsible for the maintenance of the Red Route network. Here is a map of the Red Route network.

Q1B And here is a map of the central area of the Red Route network.



Please note that this does not cover works carried out by utilities such as water, gas, electricity and telecoms companies.

This questionnaire concerns the condition of the carriageway on the Red Route network.

TLRN use

Q1A How often do you #USE# on the Red Route Network.

5 or more days a week
3-4 days a week
2 days a week
Once a week
Once a fortnight **GO TO Q3**
About once a month **GO TO Q3**
Less than once a month **GO TO Q3**

Q2. How many times do you #USE# on the Red Route Network on average in a week? You may #USE# on the carriageway more than once in a day.

Q3. How many hours would you say you #USE# on the Red Route Network on average in a week?

IF RESPONDENT #USE#S ON THE CARRIAGEWAY LESS THAN ONCE A WEEK MAKE ESTIMATE, FOR EXAMPLE IF ONCE A MONTH, DIVIDE BY FOUR[5]

Q4. For what purposes do you #USE# on the Red Route Network? **PROBE, CODE ALL MENTIONED**
Work commuting
Education commuting
Employer's business
Shopping
Visiting friends/relatives
Sport/entertainment
Holiday
Other day out
Personal business (eg going to doctor, lawyer)
Other **SPECIFY**

Q5. What is the **MAIN** purpose that you #USE# on the Red Route Network?
Work commuting
Education commuting
Employer's business
Shopping
Visiting friends/relatives
Sport/entertainment
Holiday
Other day out
Personal business (eg going to doctor, lawyer)
Other

Current perceptions of carriageway condition

Q6. **DRIVERS:** This questionnaire is about the condition of the carriageway (or road). We are particularly interested in your views with respect to the nature of any defects (for example, subsidence, cracks etc) which may or may not affect how you drive on the carriageway.

CYCLISTS: This questionnaire is about the condition of the carriageway (or road). We are particularly interested in your views with respect to the nature of any defects (for example, subsidence, cracks etc) which may or may not affect how you ride on the carriageway.

How would you describe the overall condition of the Red Route Network in London?
Very poor
Poor
Neither poor nor good
Good
Very good
Don't know

Q7. How important is the quality of the Red Route Network to you?
Very unimportant
Unimportant
Neither
Important
Very important
Don't know

Rating of carriageway defects

Q7B We are now going to focus on a series of carriageway defects, that is aspects of the carriageway where wear and tear has meant that the carriageway surface is no longer smooth and flat.

[5] This will allow us to examine values in relation to time

We will be looking at the following carriageway defects:

- Rutting (where there is a depression of the carriageway surface in the vehicle wheel path)
- Subsidence (where part of the carriageway subsides to a lower level)
- Fretting (where the carriageway surface breaks up)
- Cracking (cracks on the carriageway surface)
- Flooding (where parts of the carriageway remain under water after rain)
- Ironworks (where ironwork is raised or sunken)
- Fatting (where there is a loss of surface texture on the carriageway).

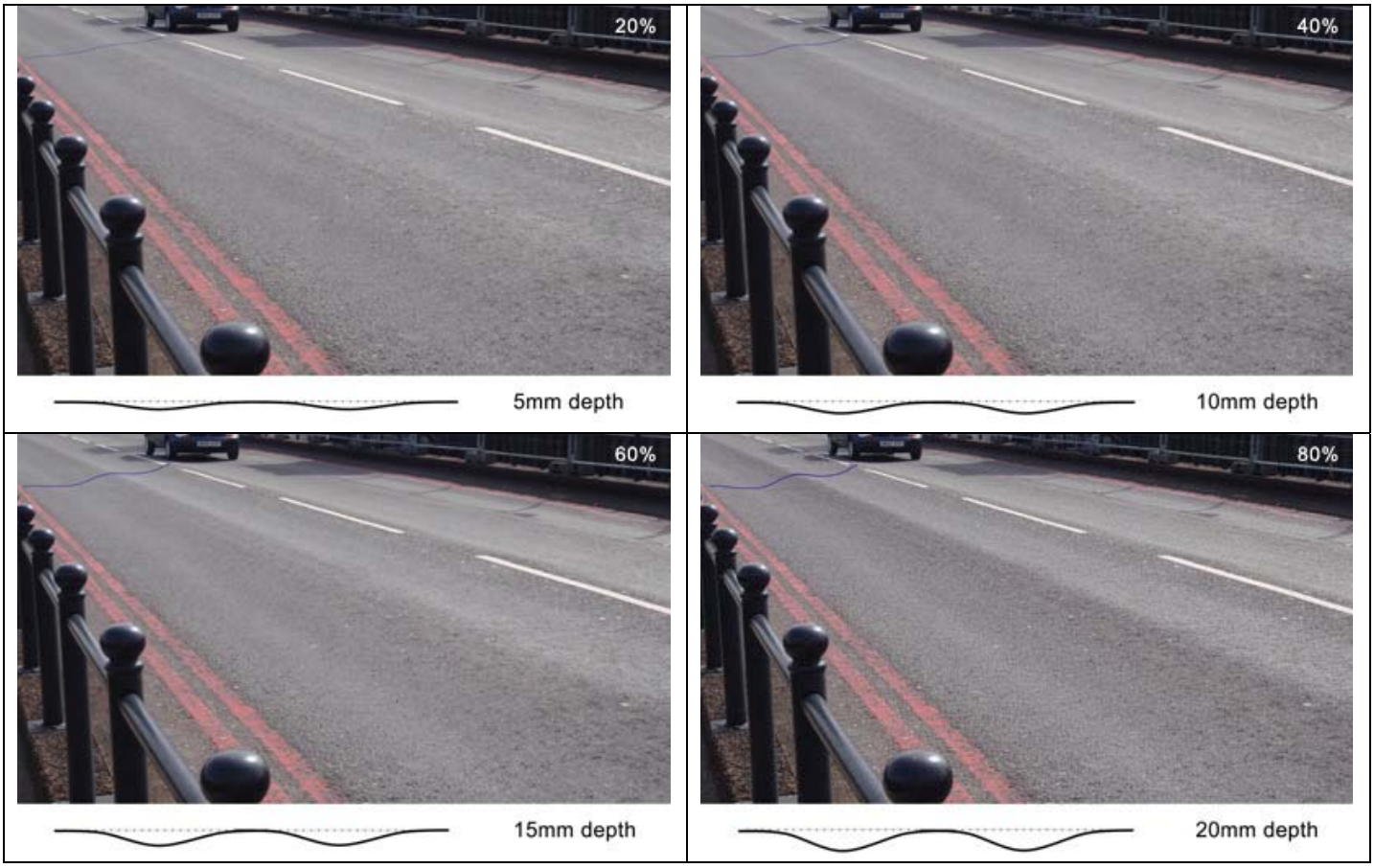
Each of these defects may occur to different degrees and over varying parts of the Red Route Network. They may also occur separately or together.

For this research we will deal with each of them separately.

Condition defect levels

I am now going to show you photos of these carriageway defects.

There are four photos of each defect type. The level of defects can vary from 0% (which is no defect), through to 100% (which is the whole width of the carriageway affected by the defect). Each set of four photos shows how a part of the carriageway looks for an increasing percentage of defect, for example, 20% defect, 40% defect, 60% defect and 80% defect. The percentages are shown on the top right of each photo. Some sets of photos, like these, show the depth of the defect in millimetres below the image.



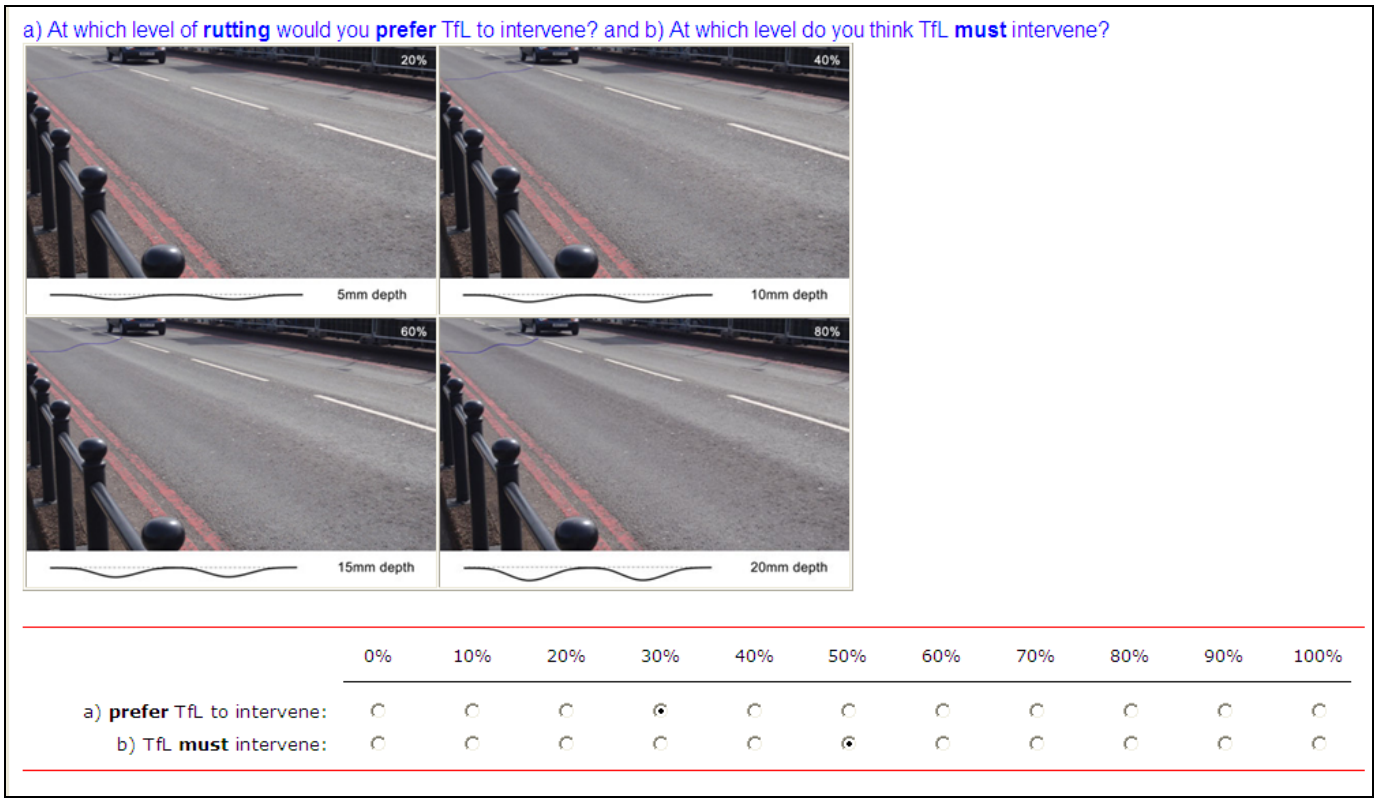
Q7D This research is seeking to capture **your opinions** on these defects; **your opinions** will be used to inform TfLs maintenance plans.

It is, of course, not feasible or necessary to maintain the whole Red Route Network in perfect condition. Therefore TfL would like you to consider each defect type, with regard to #USE2# on the Red Route Network, and say:

1. At which defect % would you **prefer** TfL to intervene?; and
2. At which defect % do you think TfL **must** intervene? That is, when the defect % is **above** this level it is **no longer acceptable** to you.

The answer to both of these could be the same %. There are no right or wrong answers

On the next screen we show an example with rutting:



In this example a driver said that they would **prefer** TfL to intervene if rutting was at about 30% and that they thought TfL **must** intervene when rutting was at the 50% level.

Now I will ask you to give your views on what defect levels you would prefer TfL to intervene and think TfL must intervene.

RANDOMISE ORDER OFQ8A-Q15A

Q8A **Rutting**

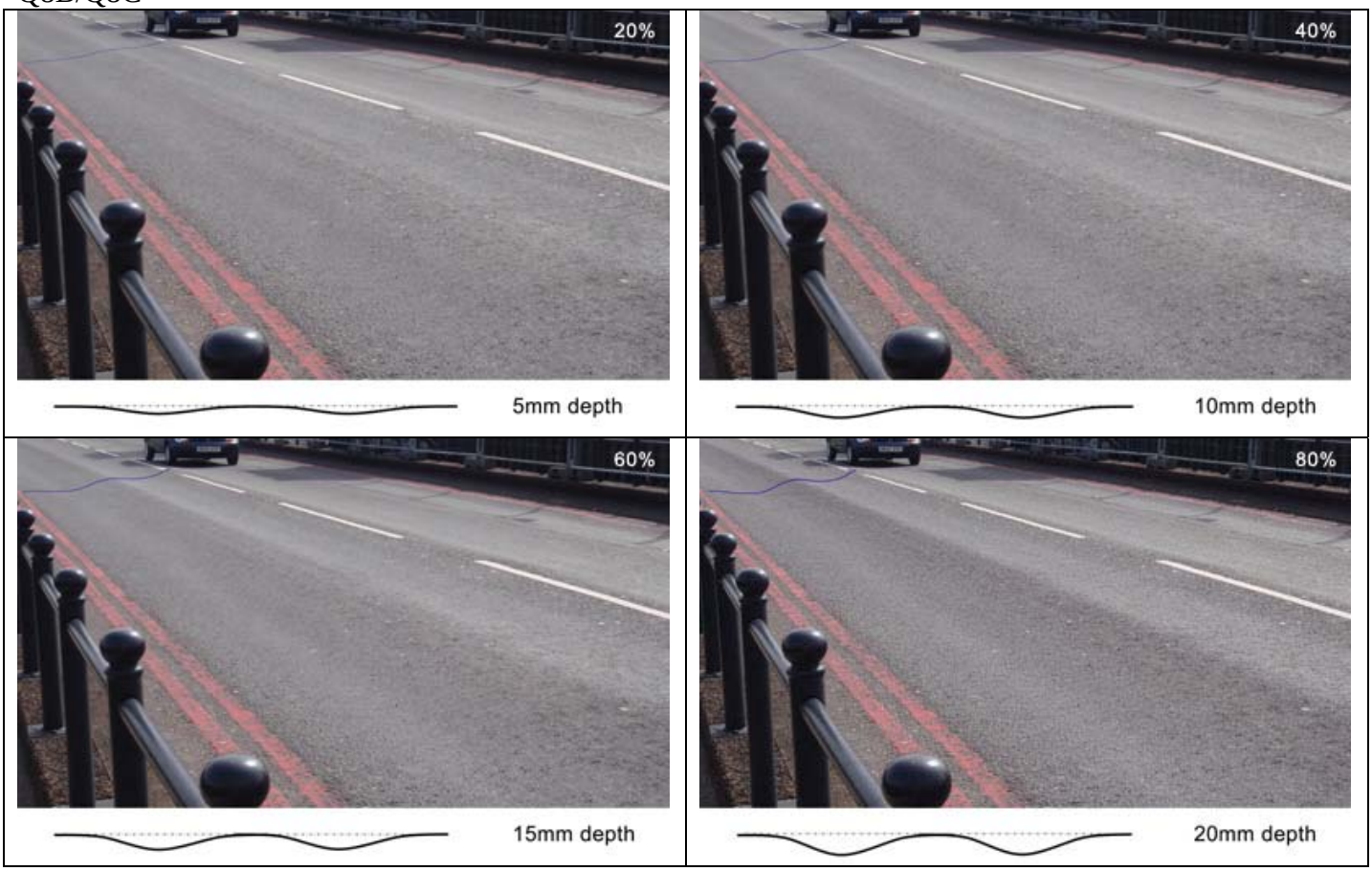
Rutting is depression of the carriageway surface in the vehicle wheel path.

Please look at the following four images and say:

a) At which level of **rutting** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q8B/Q8C



a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q9A **Subsidence – area**

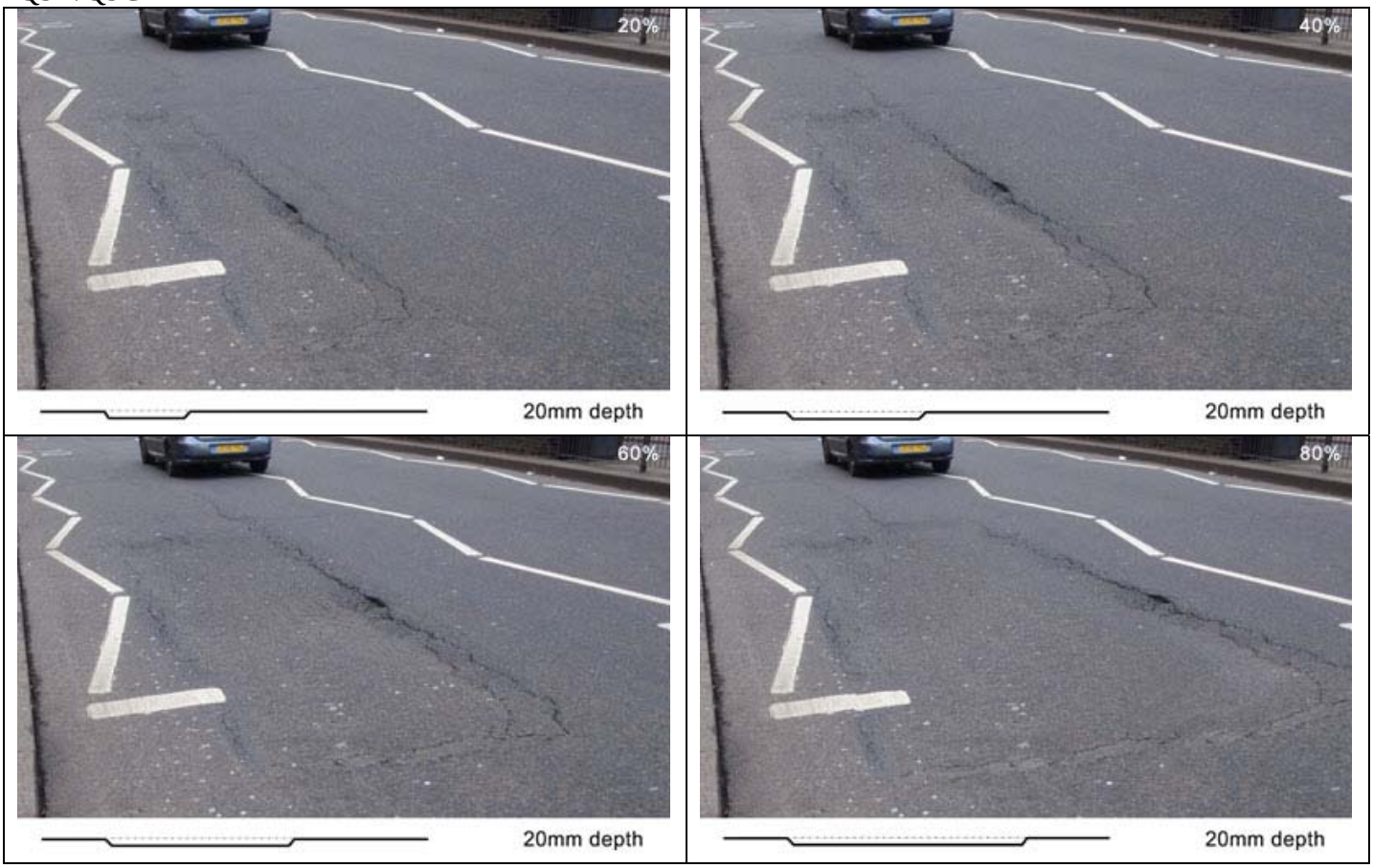
Subsidence is where part of the carriageway subsides to a lower level.

Please look at the following four images which concern the area that is subsided and say:

a) At which level of **subsidence (area)** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q9B/Q9C



a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q10A **Fretting**

Fretting is where the carriageway surface breaks up.

Please look at the following four images and say:

a) At which level of **fretting** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q10B/Q10C

a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q11A **Cracking**

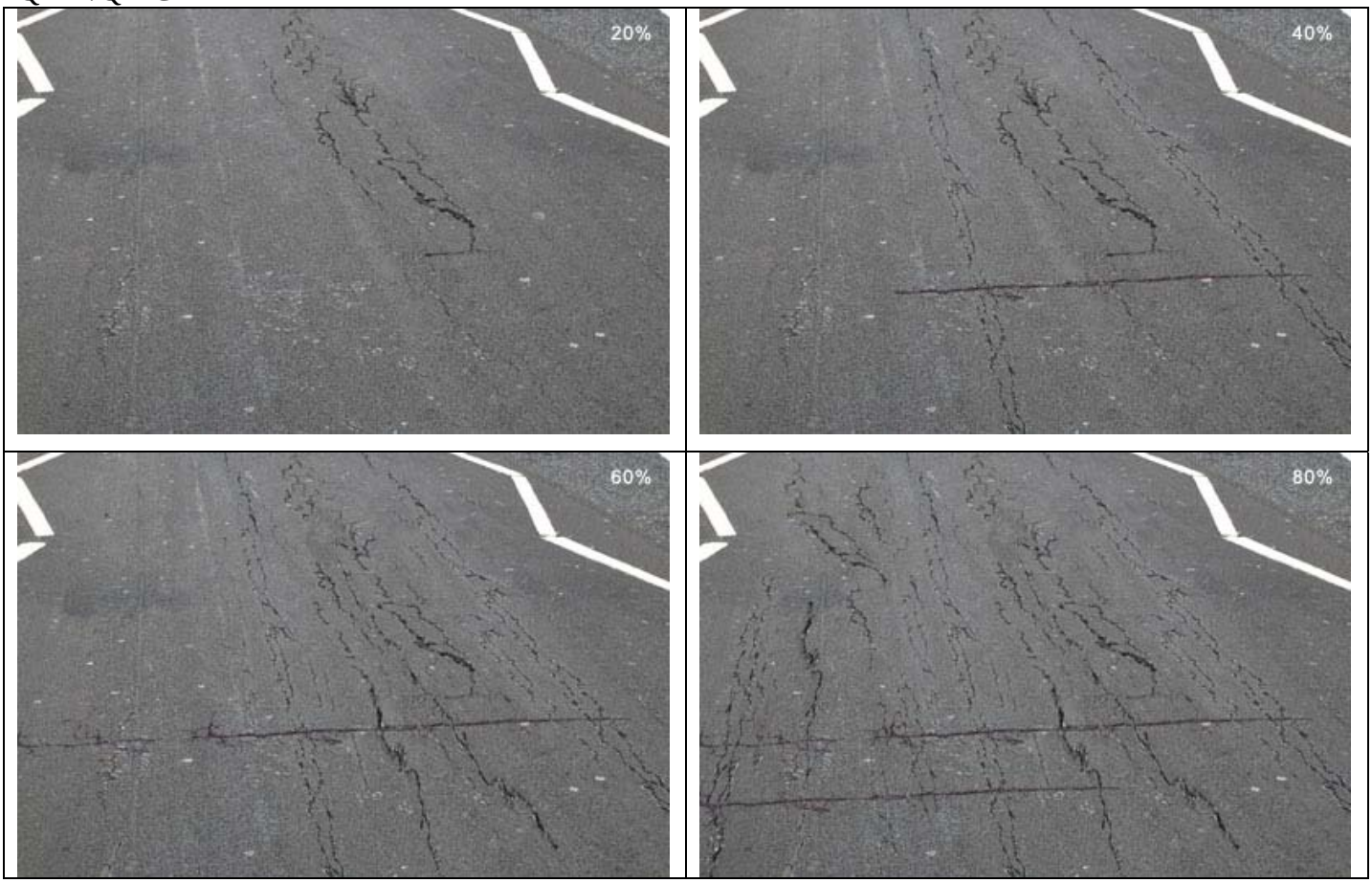
Cracking - cracks on the carriageway surface.

Please look at the following four images and say:

a) At which level of **cracking** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q11B/Q11C



a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q12A **Flooding**

Flooding is where parts of the carriageway remain under water after rain.

Please look at the following four images and say:

a) At which level of **flooding** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q12B/Q12C

a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q13A **Ironworks**

Ironworks is where ironwork is raised or sunken.

Please look at the following four images and say:

a) At which level of **ironworks** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q13B/Q13C

Cracks occurring on the outside of the ironwork

A sinking of the ironwork by 10mm

A sinking of the ironwork by 20mm

A sinking of the ironwork by 30mm

a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q14A **Fatting**

Fatting is a loss of surface texture on the carriageway.

Please look at the following four images and say:

a) At which level of **fatting** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q14B/Q14C

a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Q15A **Subsidence – depth**

Subsidence is where part of the carriageway subsides to a lower level.

Please look at the following four images which concern the depth that is subsided and say:

a) At which level of **subsidence (depth)** would you **prefer** TfL to intervene? and

b) At which level do you think TfL **must** intervene?

Q15B/Q15C

a) **Prefer** TfL to intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
b) TfL **must** intervene:	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Diagnostics

Q15. I would now like to ask a few questions about the questions I have just asked you.

Were the photos clear to you?
Yes **GO TO Q17**
No

Q16. Which photos were not clear? **MULTICODE POSSIBLE**
Rutting
Subsidence – area
Fretting
Cracking
Flooding
Ironworks
Fatting
Subsidence - depth

SHOW RELEVANT PHOTOS, INDICATE WHICH ARE NOT CLEAR AND WHY

Q17. Was it clear what we were asking about when we asked "at which defect % would you **prefer** TfL to intervene"?
Yes **GO TO Q19**
No

Q18. In what way was it not clear? **PROBE**

Q19. Was it clear what we were asking about when we asked "at which defect % do you think TfL **must** intervene?"
Yes **GO TO Q21**
No

Q20. In what way was it not clear? **PROBE**

Priorities

Q21. We have looked at a number of different types of defects to the carriageway. How would you rank them in terms of priority for improvements? **ROTATE. SHOW IMAGES AGAIN**

	1st	2nd	3rd	4th	5th	6th	7th	8th	don't know
Rutting									
Subsidence – area									
Fretting									
Cracking									
Flooding									
Ironworks									
Fatting									
Subsidence – depth									

Q21B Do you have any other comments you would like to make on the condition of the Transport for London road network?

Respondent characteristics

Q22. Finally, I would like to ask you some questions about yourself. This is for classification purposes only. The personal information you provide during this survey will be kept confidential by Accent and will not be disclosed to third parties. It will be used by Accent only for this study, which is being undertaken for TfL.

Which of the following age groups do you fall into? **SHOW SCREEN**

18-24
25-34
35-44
45-59
60-64
65 or over

Q23. **RECORD GENDER**

Male
Female

Q24. What is your employment status? **IF EMPLOYED PROBE WHETHER FULL OR PART TIME**

Working full-time (30+ hours a week)
Working part-time (less than 30 hours a week)
Student
Self employed
Seeking work
Retired
Looking after the home
Other

Q25. Which of the following groups do you classify yourself as and are happy for me to record? **READ OUT**

White - British
White - Irish
White - Any other white background
Indian
Pakistani
Bangladeshi
Any other Asian background
Caribbean
African
Any other Black background
White and Black Caribbean
White and Black African
White and Asian
Any other mixed background
Chinese
Any other
Refused

Q26. What is your total gross annual household income? This is income from work and any other sources such as benefits and pensions, before deductions e.g. income tax, National Insurance. **READ OUT**

Under £5,000
£5,000 to £9,999
£10,000 to £14,999
£15,000 to £19,999
£20,000 to £24,999
£25,000 to £34,999
£35,000 to £49,999
£50,000 to £74,999
£75,000 to £99,999
£100,000 or over
Don't know
NA

Thank you for your help in this research

This research was conducted under the terms of the MRS code of conduct and is completely confidential. If you would like to confirm my credentials or those of Accent please call the MRS free on 0500 396999. **HAND OVER THE THANK YOU SLIP.**

Please can I take a note of your name and where we can contact you for quality control purposes?

I confirm that this interview was conducted under the terms of the MRS code of conduct and is completely confidential

Time Interview completed:

APPENDIX B

Recruitment Questionnaire

Interviewer no: | | | | | **Interviewer name:** | |

Date: | | / | | **Time interview started:** | | : | | **URN……..**

Recruitment

Good morning/afternoon/evening. My name is ..... from Accent and I am carrying out research for Transport for London into carriageways in London. Any answer you give will be treated in confidence in accordance with the Code of Conduct of the Market Research Society.
Can I ask you a few questions to see if you are in scope for this survey?

Q1. Do you ever drive any of these vehicles on the Red Route network? **SHOW MAP**

1. HGV (Heavy Goods Vehicle) **CHECK QUOTAS AND RECRUIT**
2. LGV (Light Goods Vehicle) **CHECK QUOTAS AND RECRUIT**
3. Bus **CHECK QUOTAS AND RECRUIT**
4. Powered 2-Wheeler (P2W, motorbike, moped) **GO TO Q2**
5. Car **GO TO Q2**
6. Bicycle **GO TO Q2**
7. No **THANK & CLOSE**

Q2. Which of the following age groups do you fall into? **READ OUT**

1 17 or under **THANK & CLOSE**
2 18-30 years
3 31-45 years
4. 46-60 years
5. 61+ years

CHECK QUOTAS: CAR MINIMUM 15% AGED 18-30, 35% 31-45, 20% 46-60, 10% 61+
P2W MINIMUM 23% AGED 18-30, 35% 31-45, 15% 46-60
CYCLE MINIMUM 25% AGED 18-30, 40% 31-45, 15% 46-60

Mode	18-30	31-45	46-60	61+	Male	Female
Car	18	40	26	16	56	44
Motorcyclists	27	40	20	13	66	34
Cyclist	29	45	19	6	69	31

Q3. **RECORD GENDER:**

1. Male
2. Female

CHECK QUOTAS: CAR MINIMUM 40% FEMALE,
P2W MINIMUM 29% FEMALE;
CYCLE MINIMUM 25% FEMALE

Recruitment

Thank you for answering those questions. Would you be able to take part in our survey? You will be given a £5 voucher to thank you for your time. **PERSUADE AND REASSURE**.

Thank you for your help in this research

This research was conducted under the terms of the MRS code of conduct and is completely confidential. If you would like to confirm my credentials or those of Accent please call the MRS free on 0500 396999. **HAND OVER THE THANK YOU SLIP.**

Please can I take a note of your name and where we can contact you for quality control purposes?

Respondent name: .....

Telephone: home:.....work:.....

Time Interview completed: | | | : | |

APPENDIX C

Pilot Report

Road Network Management Phase 2 – Pilot Report

Introduction

This is a note on the pilot of the questionnaire.

The research was designed to gather customer minimum and preferred levels of service with respect to specific carriageway condition defects.

The method was a face-to-face CAPI approach using a hall test method supplemented by face-to-face at home/in office interviews for some of the more difficult to achieve respondent types such as LGV, HGV, bus and P2W drivers.

Potential respondents were approached outside the hall venue. A recruitment questionnaire and a map of the Red Route network was used. An incentive of £5 was offered to each participant to participate in the interview.

The hall test pilot took place on Thursday 29 April at St. Francis of Assisi Church Hall, Ravenswood Avenue, West Wickham. 48 of the target of 50 interviews were undertaken at the hall. The remaining two interviews were undertaken outside the hall on 1 May 2010.

Feedback on Pilot

The interview length ranged from 11 to 41 minutes with an average length of 19 minutes.

Overall, the pilot questionnaire worked well and with a few changes we recommend proceeding to the main stage.

TOP LINE RESULTS

We show the top line results below. All the data is shown as whole numbers (not per cents). Recommended changes are shown in boxes.

There were targets by driver type for the 50 interviews. These were met, as shown below:

• Respondent type:	**target**	**achieved**
– Cyclist	4-5	6
– Powered 2-wheeler (P2W, motorbike, moped) driver	1-2	2
– Car driver	33-38	33
– LGV (Light Goods Vehicle)driver	5-7	7
– HGV (Heavy Goods Vehicle)driver	1-2	1
– Bus driver	0-1	1

Base: 50

There were also age and gender quotas for car drivers and cyclists. These were all met except for the youngest age band for cyclists.

- Car drivers:

Age	**minimum target**	**achieved**
18-30	5	7
31-45	12	12
46-60	7	8
61+	3	5
Gender		
Female	13	22

- Cyclists:

Age	**minimum target**	**achieved**
18-30	2	0
31-45	2	2
46-60	1	3
61+	0	1
Gender		
Female	2	5

TLRN use

- Q1 How often do you drive/cycle on the Red Route Network?

5 or more days a week	26
3-4 days a week	12
2 days a week	6
Once a week	5
Once a fortnight	0
About once a month	0
Less than once a month	1

Base: 50

- Q2 How many times do you drive/cycle on the Red Route Network on average in a week?

2	9
3	1
4	5
5	2
6	1
8	6
10	9
12	2
14	2
15	1
16	1
18	1
20	3
30	2
42	1
50	2
72	1
84	1

Base: 50

The average was 14.3 (or twice a day).

- Q3 How many hours would you say you drive/cycle on the Red Route Network on average in a week?
  - 0.3 1
  - 1 7
  - 1.3 1
  - 1.5 1
  - 2 10
  - 2.5 2
  - 3 5
  - 4 3
  - 5 2
  - 6 1
  - 7 1
  - 8 3
  - 10 3
  - 12 2
  - 15 1
  - 25 1
  - 28 2
  - 30 3
  - 40 1

Base: 50

The average was 7 hours 47 minutes.

- Q4 For what purposes do you drive/cycle on the Red Route Network?
  - Work commuting 24
  - Education commuting 3
  - Employer's business 7
  - Shopping 26
  - Visiting friends/relatives 19
  - Sport/entertainment 10
  - Holiday 3
  - Other day out 9
  - Personal business 8
  - Other 1

Base: 50

On average 2.2 purposes were mentioned by each respondent.

Those who mentioned more than one purpose (31 of the 50) were asked what the main purpose was:

- Q5 What is the **MAIN** purpose that you drive/cycle on the Red Route Network?
  - Work commuting 13
  - Education commuting 2
  - Employer's business 1
  - Shopping 5
  - Visiting friends/relatives 4
  - Sport/entertainment 2
  - Holiday 0
  - Other day out 2
  - Personal business 1
  - Other 1

Base: 31

Current perceptions of carriageway condition

- Q6 How would you describe the overall condition of the Red Route Network in London?
  - Very poor 2
  - Poor 19
  - Neither poor nor good 10
  - Good 18
  - Very good 1
  - Don't know

Base: 50

- Q7 How important is the quality of the Red Route Network to you?
  - Very unimportant 0
  - Unimportant 3
  - Neither 3
  - Important 18
  - Very important 26
  - Don't know 0

Base: 50

Rating of carriageway defects

Respondents were asked the following questions for each of eight carriageway condition defects
a) At which level of **rutting** would you **prefer** TfL to intervene?
b) At which level do you think TfL **must** intervene?

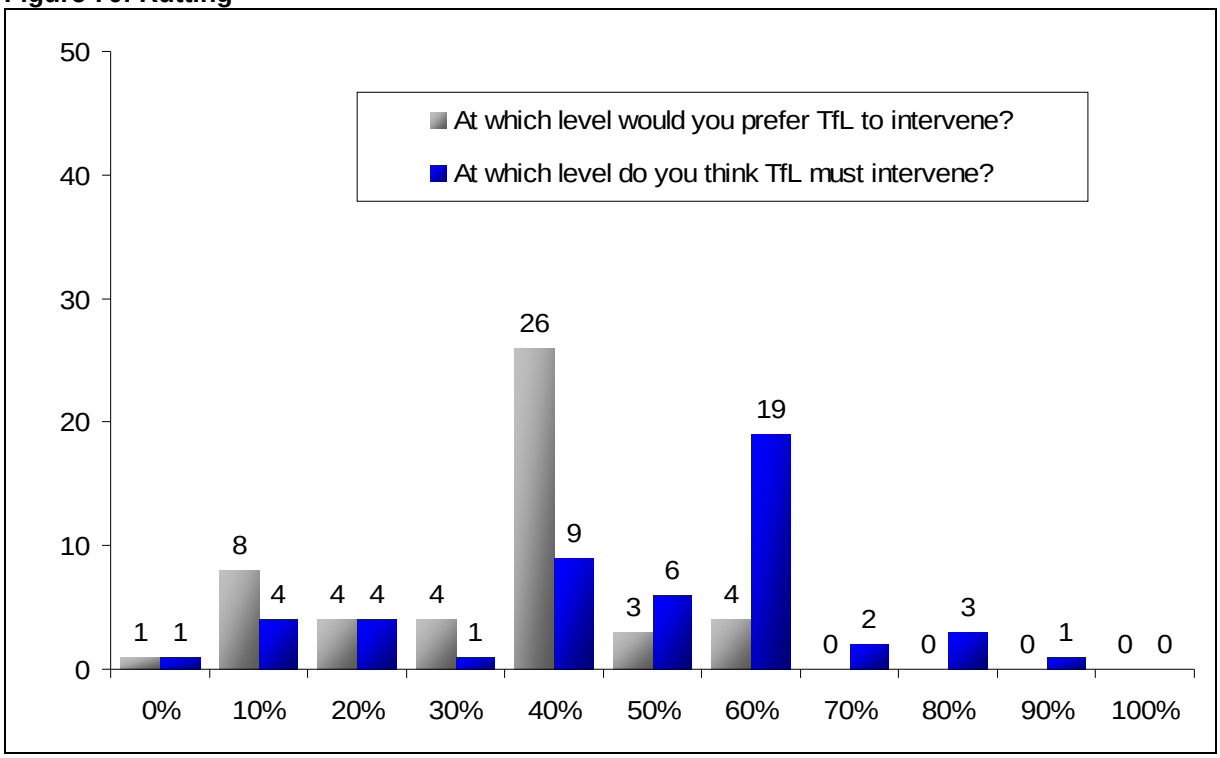
The order that the carriageway condition defects were presented was randomised.

To assist respondents, the interviewer ran through a dummy example which featured rutting. However, some of the interviewers allowed the respondent to answer (effectively providing rutting to some respondents twice).

Recommendation
We recommend that for the main stage we will make it clear that this is an example, possibly through having screenshots of the question with the relevant script typed up.

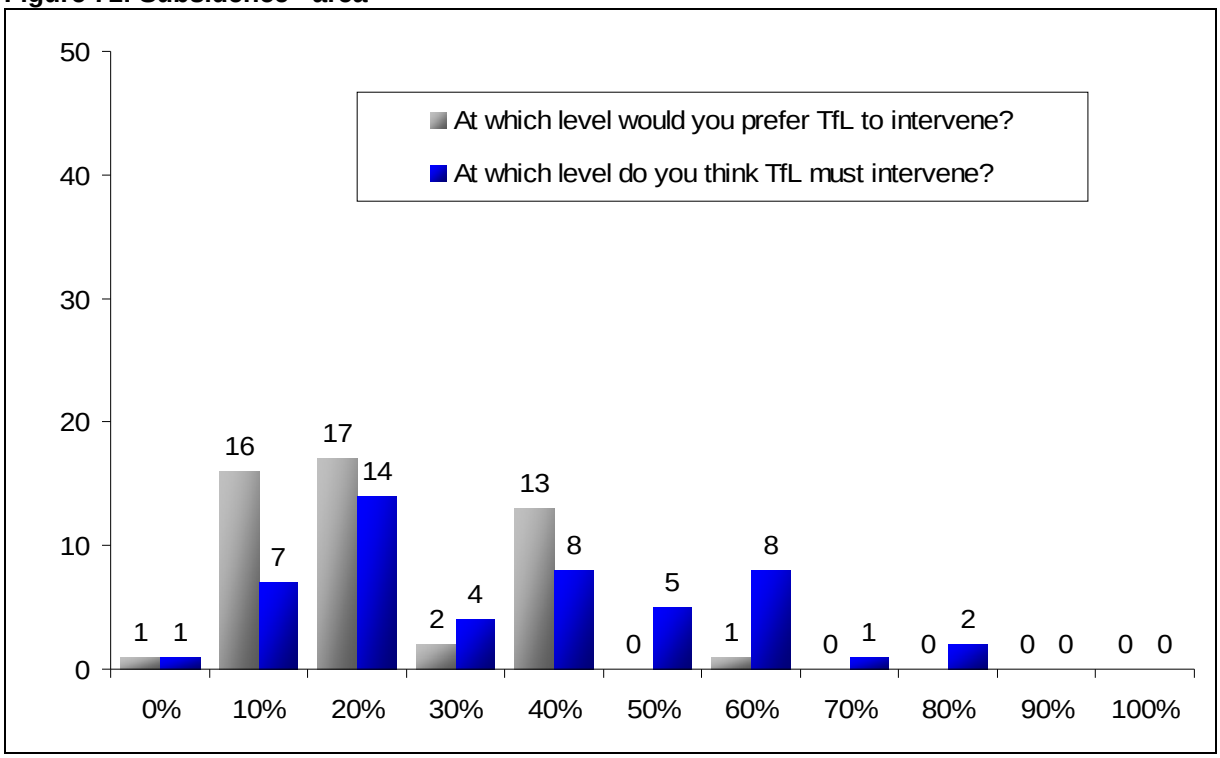
Figure 70 to Figure 77 illustrate the responses to each of the two questions for the eight carriageway condition defects.

Figure 70: Rutting



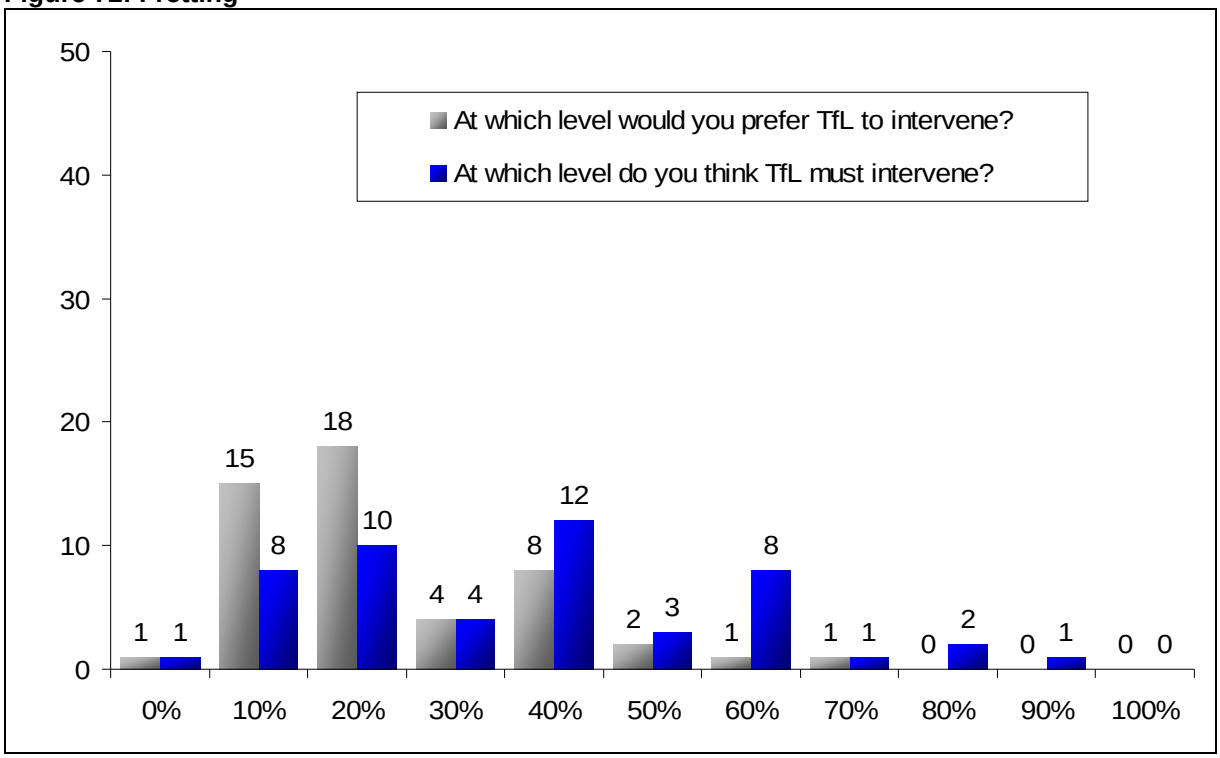
Base: 50

Figure 71: Subsidence - area



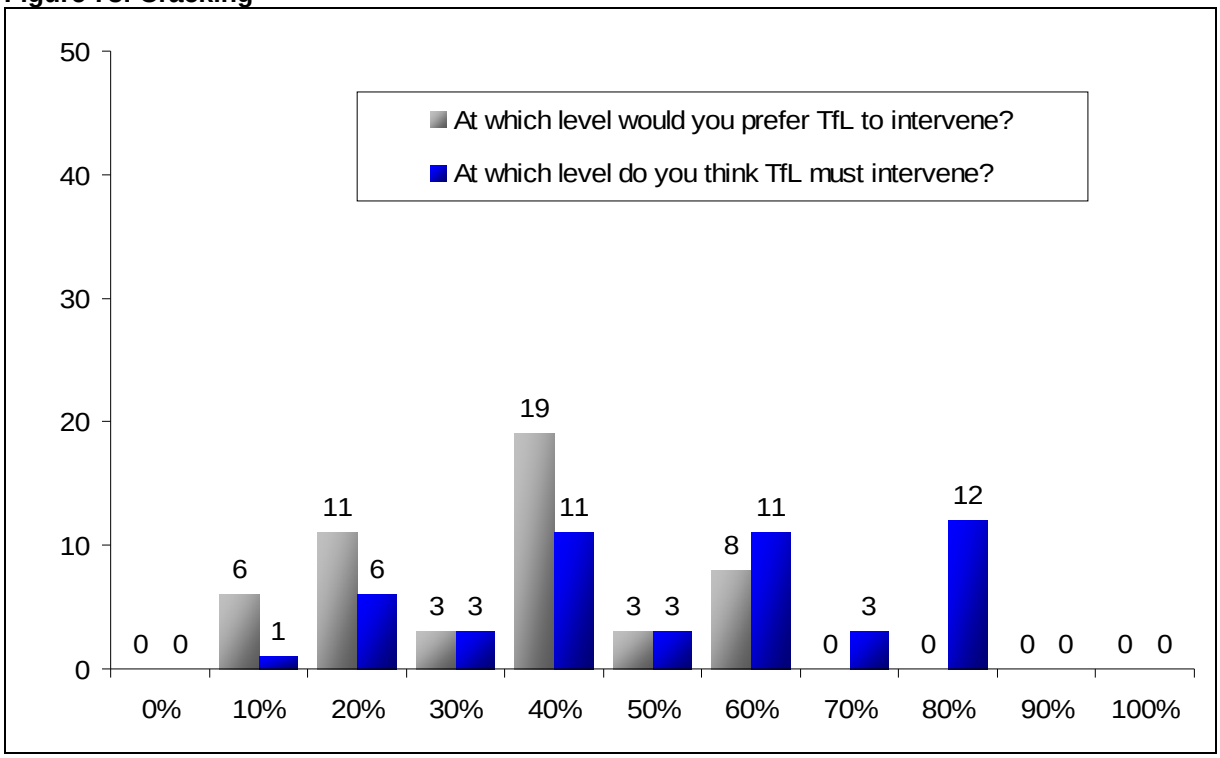
Base: 50

Figure 72: Fretting



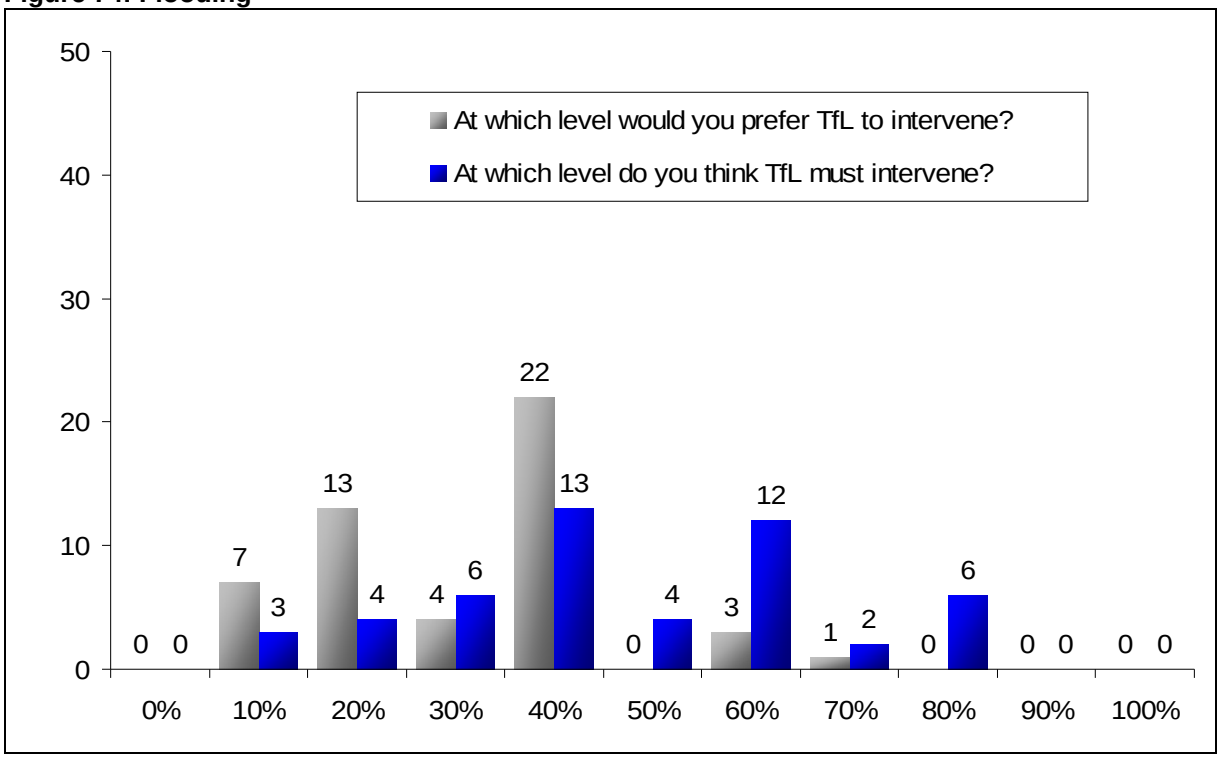
Base: 50

Figure 73: Cracking



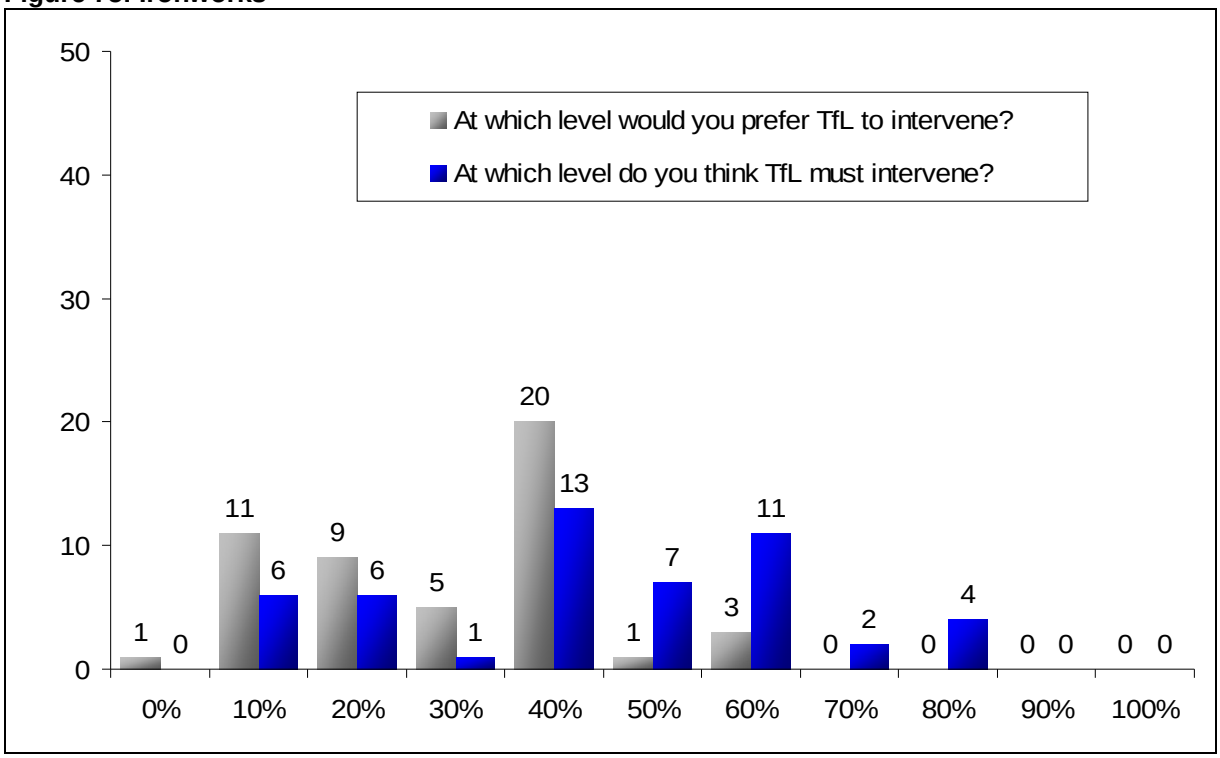
Base: 50

Figure 74: Flooding



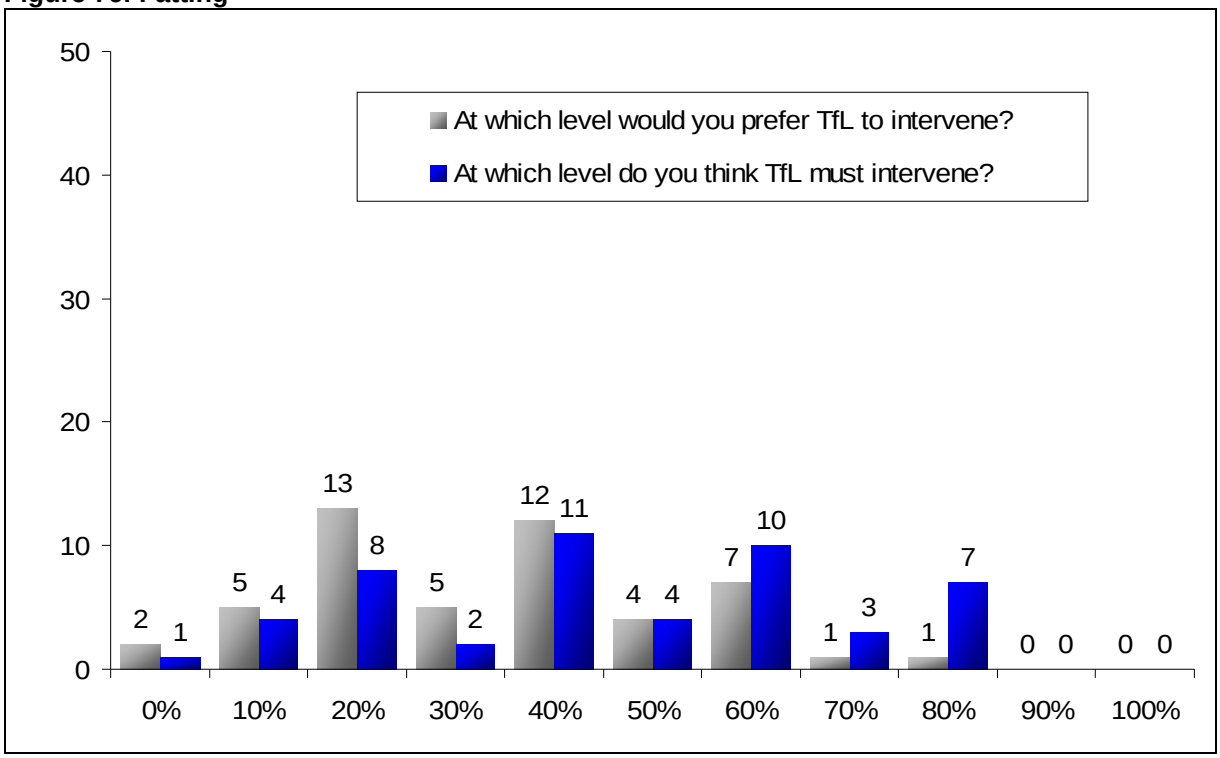
Base: 50

Figure 75: Ironworks



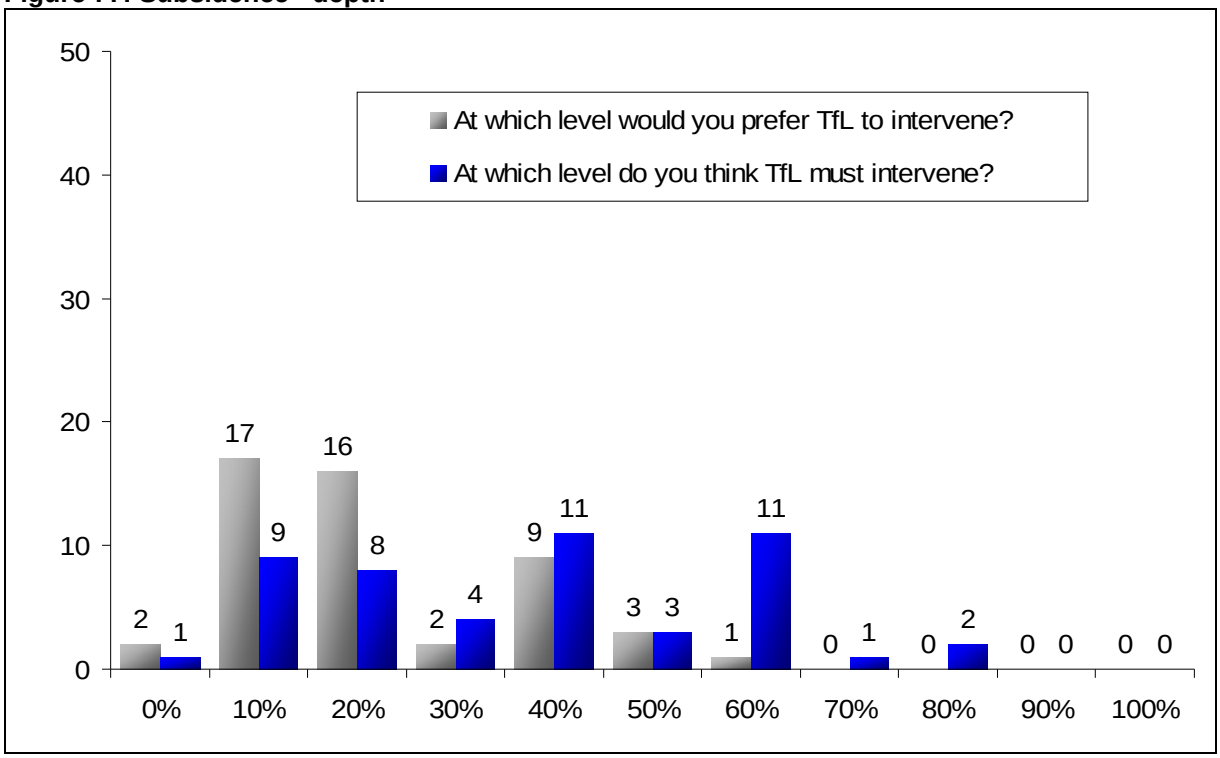
Base: 50

Figure 76: Fatting



Base: 50

Figure 77: Subsidence - depth



Base: 50

For most of these one or two respondents answered 0%. This is nonsensical as it implies they prefer TfL to intervene or think TfL must intervene when the carriageway condition is perfect. This implies one or two respondents appear not to have understood.

Recommendation
We recommend that we emphasise in the main phase that 0% = perfect. We will also brief interviewers to assist respondents who want to answer '0%' by explaining again what it means.

Subsidence appears twice, once for area and once for depth. In the pilot the difference is not made very clear.

Recommendation
The title screen for each should be changed to 'Subsidence – Area' and 'Subsidence – Depth'. In addition the question screen should also highlight the difference, for example *"At which level of **subsidence (area)** would you **prefer** TfL to intervene"*

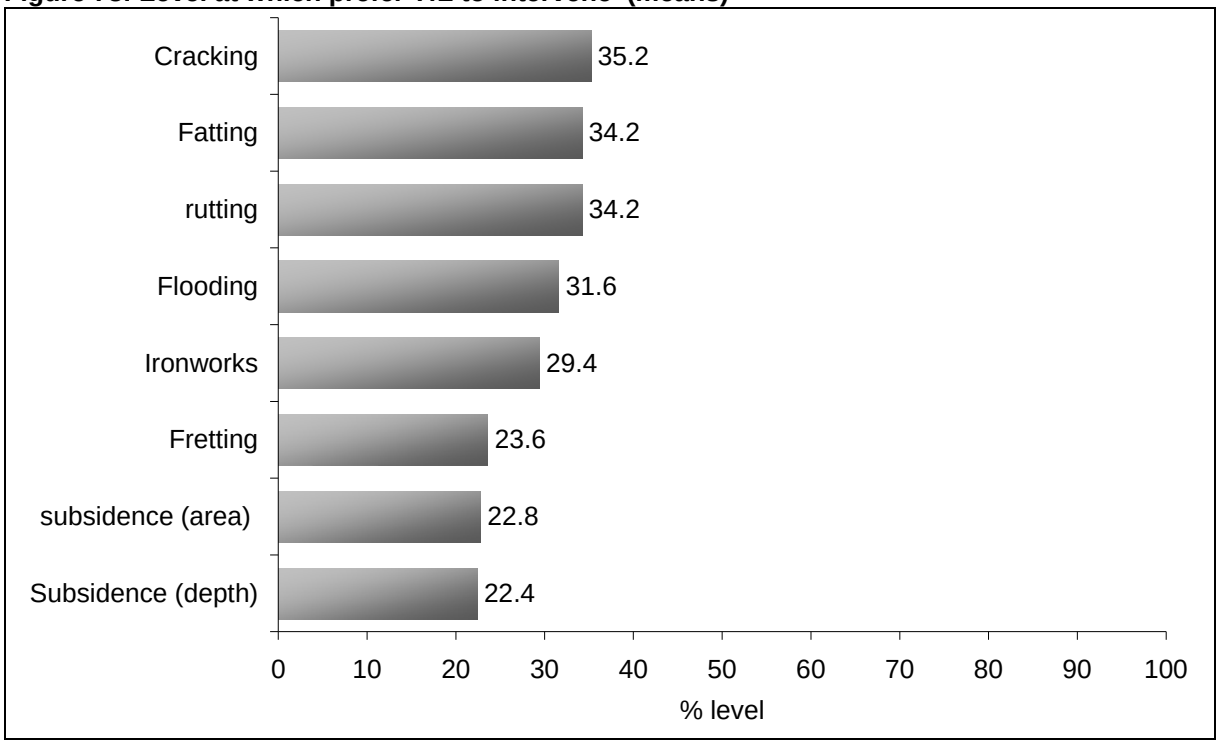
One of the interviewers reported that some respondents thought their answers had to match the percentages on the photos (ie 20%, 40%, 60% or 80%). Analysis of responses does show a tendency for answers to match these percentages with between 52% and 80% of responses doing so for the 16 questions.

Recommendation
A clearer fully scripted example will help ensure respondents know they can give other percentages.

For all eight carriageway condition defects there was a tendency for there to be a higher level for 'TfL must intervene' than for 'prefer TfL to intervene' as would be expected.

The mean levels for 'prefer TfL to intervene' are shown in Figure 78. The lower the level the worse the condition defect. Subsidence (both area and depth) and fretting are the priorities for road users.

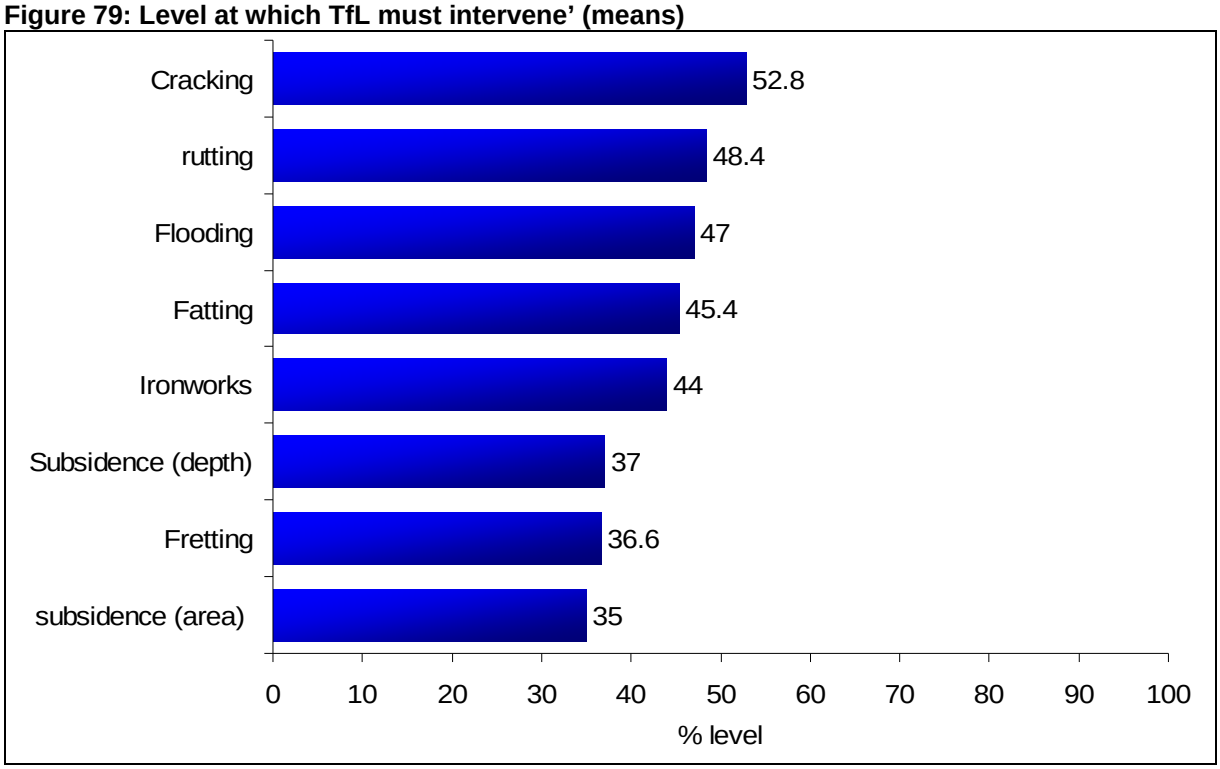
Figure 78: Level at which prefer TfL to intervene' (means)



Base: 50

The mean levels for 'TfL must intervene' are shown in Figure 79. The lower the level the worse the condition defect. Subsidence (both area and depth) and fretting are the priorities for road users.

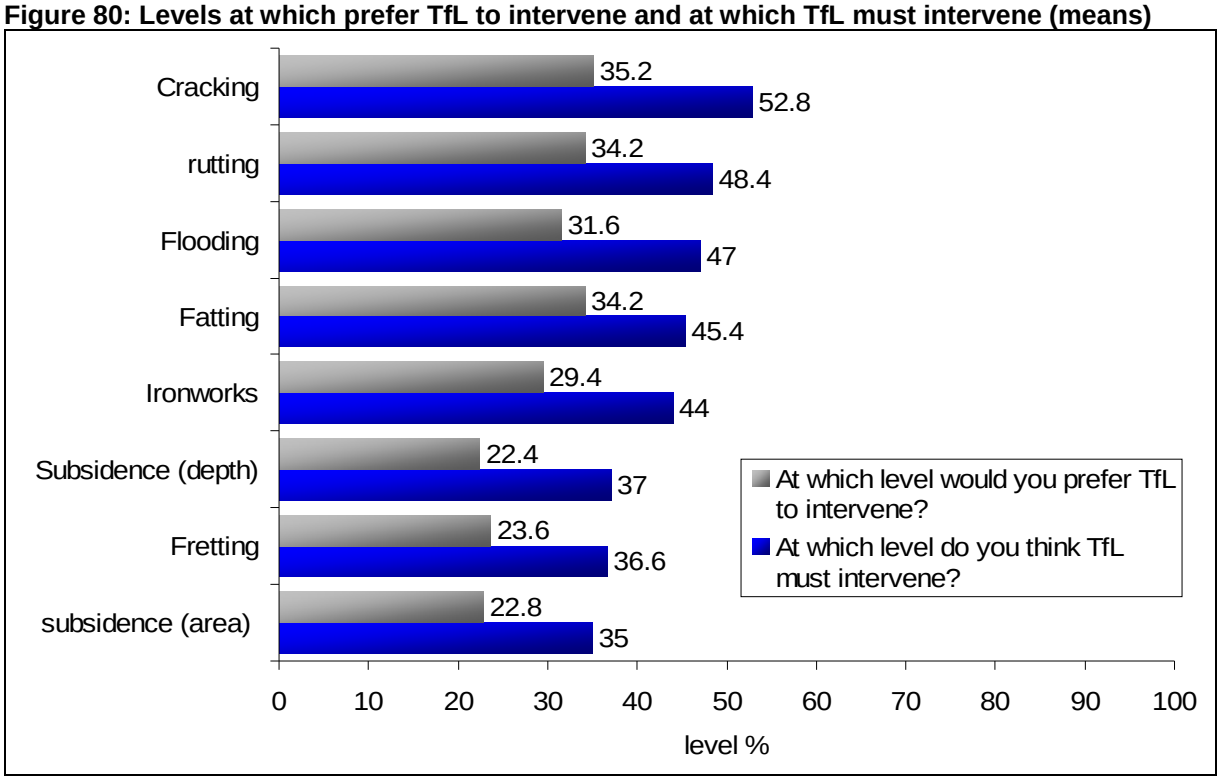
Figure 79: Level at which TfL must intervene' (means)



Base: 50

These are combined in Figure 80 (ranked in order of 'TfL must intervene'). The gap between the preferring TfL to intervene and TfL must intervene ranges from 11.2% to 17.6% with an average of 14.1%

Figure 80: Levels at which prefer TfL to intervene and at which TfL must intervene (means)



Base: 50

Diagnostics

A series of questions were asked to check whether respondents found the photos to be clear and understood the key questions on intervention.

- Q15 Were the photos clear to you?
  - Yes 47
  - No 3

Base: 50

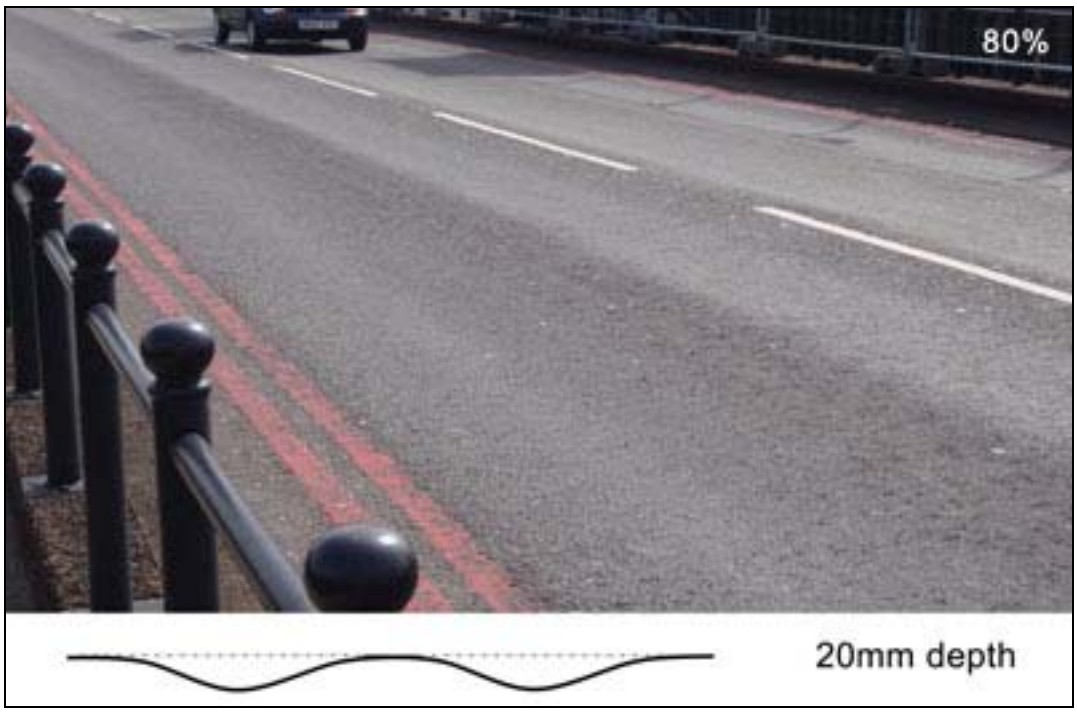
Almost all found the photos to be clear.

- Q16 Which photos were not clear?
  - Rutting 2
  - Subsidence 0
  - Fretting 0
  - Cracking 0
  - Flooding 0
  - Ironworks 0
  - Fatting 1

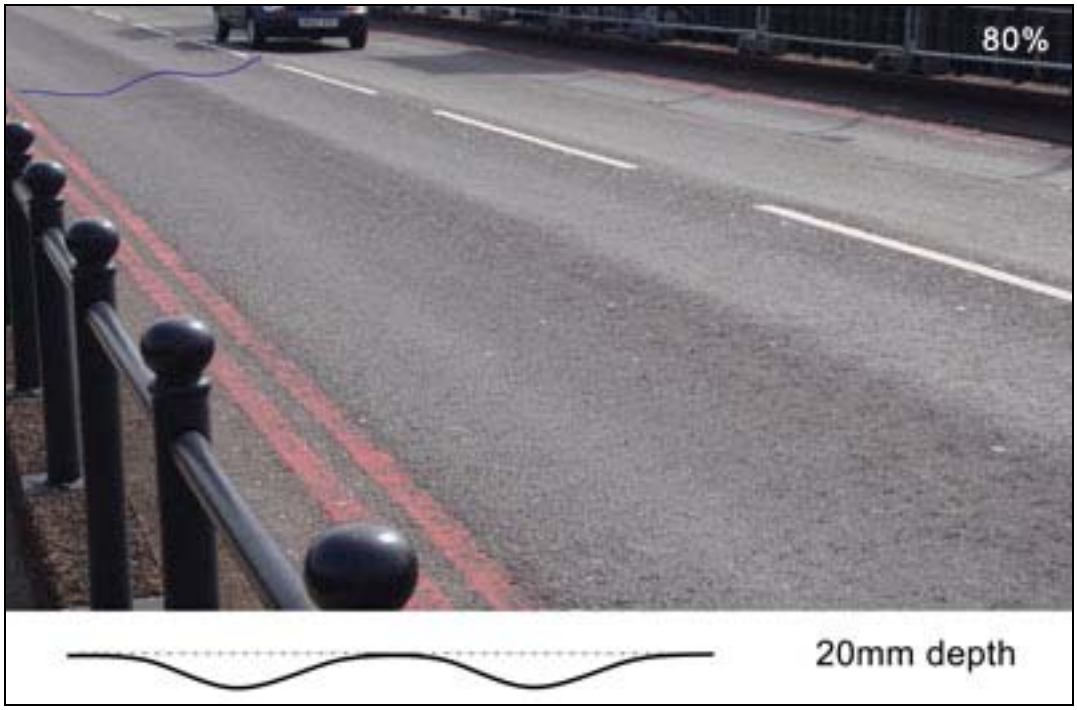
Base: 3

Two found the photos on rutting and one found the photos on fatting not to be clear.

The photos on rutting already have a diagram underneath them showing the shape of the ruts (see example below):



One option would be to add a blue line on the image (as suggested by TfL) and shown below.



The questions on the level that they would prefer TfL to intervene and the level that TfL must intervene where clear to almost all.

- Q17 Was it clear what we were asking about when we asked "at what defect % would you **prefer** TfL to intervene"?
  - Yes 49
  - No 1

Base: 50

- Q19 Was it clear what we were asking about when we asked "at what defect % do you think TfL **must** intervene?"
  - Yes 50
  - No 0

Base: 50

The one respondent who said it was not clear seemed to have misunderstood the task. Their comment was: The preferring and the actual I find hard to differentiate between

Overall, the images and key questions have worked well.

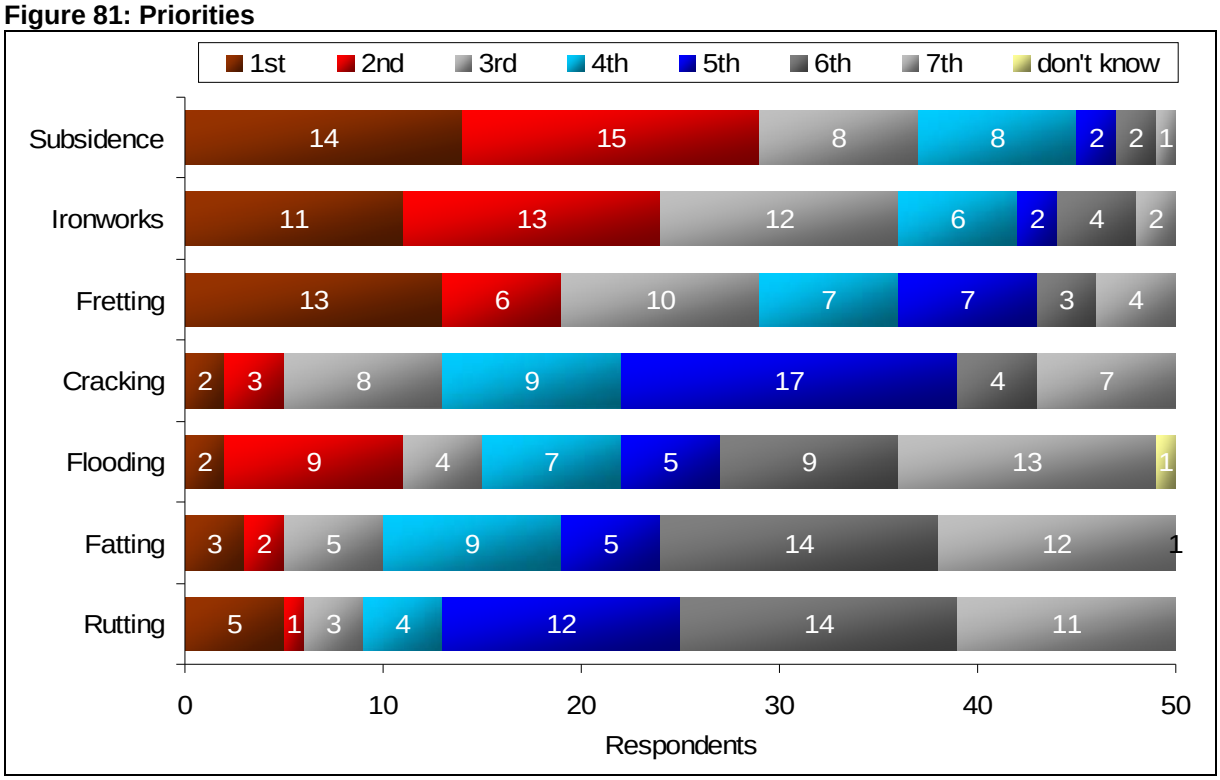
Priorities

Respondents were asked to rank the condition defects them in terms of priority for improvements.

- Q21 We have looked at a number of different types of defects to the carriageway. How would you rank them in terms of priority for improvements?
  - Rutting
  - Subsidence
  - Fretting
  - Cracking
  - Flooding
  - Ironworks
  - Fatting

Figure 81 below shows the scores and Figure 82 shows the mean priorities. The ranking for Figure 81 is based on the means.

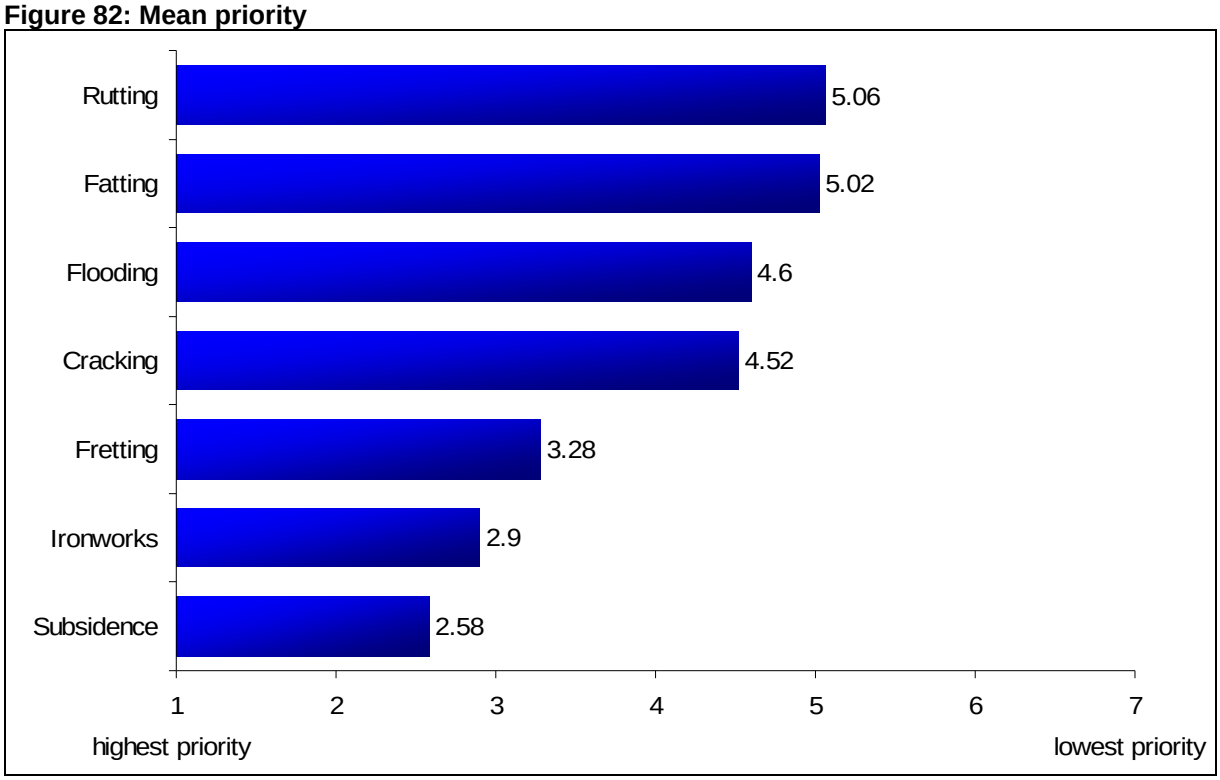
Figure 81: Priorities



Base: 50

The top priority is subsidence followed by ironworks and fretting. These fairly closely match the responses to the questions on TfL intervening.

Figure 82: Mean priority



Base: 50

Recommendation
We recommend separating out subsidence depth and subsidence area.

Respondent characteristics

The nature of the sample is shown below.

- Q22 Which of the following age groups do you fall into?
  - 18-24 4
  - 25-34 15
  - 35-44 8
  - 45-59 16
  - 60-64 6
  - 65 or over 1

Base: 50

- Q23 Gender
  - Male 22
  - Female 28

Base: 50

Q24 What is your employment status?

- Working full-time (30+ hours a week) 21
- Working part-time (<30 hours a week) 16
- Student 1
- Self employed 2
- Seeking work 1
- Retired 5
- Looking after the home 3
- Other 1

Base: 50

- Q25 Which of the following groups do you classify yourself as and are happy for me to record?
  - White – British 47
  - White – Irish 0
  - White - Any other white background 1
  - Indian 2
  - Pakistani 0
  - Bangladeshi 0
  - Any other Asian background 0
  - Caribbean 0
  - African 0
  - Any other Black background 0
  - White and Black Caribbean 0
  - White and Black African 0
  - White and Asian 0
  - Any other mixed background 0
  - Chinese 0
  - Any other 0
  - Refused 0

Base: 50

- Q26 What is your total gross annual household income? This is income from work and any other sources such as benefits and pensions, before deductions e.g. income tax, National Insurance
  - Under £5,000 1
  - £5,000 to £9,999 2
  - £10,000 to £14,999 1
  - £15,000 to £19,999 1
  - £20,000 to £24,999 2
  - £25,000 to £34,999 6
  - £35,000 to £49,999 11
  - £50,000 to £74,999 7
  - £75,000 to £99,999 1
  - £100,000 or over 4
  - Don’t know 5
  - NA 9

Base: 50

Appendix D

Comments

Car drivers comments (142 out of 306)

- A lot of potholes need mending. Very bad for cyclists as they are trying to avoid them
- According to my experience, driving all day, I think the potholes are horrible.
- After the snow damage, it would have been good to be reassured about how the road are looked after, especially on the A Roads
- All roads are very poor at the moment, damaging my car
- All the roads should be focused on, which do need more work done to them as well.
- As of late it has been good but cannot let that slip
- At the box junctions … are unfair as got a ticket sometimes you can not help but go into one
- At the moment we have a lot of fretting than other years
- Compared with major European cities I have not seen such an overall poor state of roads as in London as a capital city. I want to know where the money goes. Also, I find the surfacing they use as very, very noisy. You get the impression the objective is the lowest common denominator.
- Condition of roads are improving but could be better
- Conditions of the roads are very poor
- Considering the depth of traffic I think they are flogging a dead horse, get the volume of traffic off the road, its almost an impossible situation to keep a network that is acceptable to everybody, use the canal systems more get the lorries off the road.
- Could be a priority to use a higher grade asphalt for heavy wear road surfaces.
- Deptford Church Street is in a serious state of neglect on the road.....an enormous amount of fretting going southbound.
- Did not explain at what defect % the car will be damaged
- Don’t repair all the roads at once in same area, after roads have been dug by contractors check that the patching is correct.
- Don’t see why they ask the public how to fix roads
- Don’t think they do a lot, need to do more instead of just doing pipe work under the roads. Repair them better and more on the smaller roads need to be repaired
- Even worst for cyclist than drivers. Often roads are shut for repairs but no one working at them

- Far too many speed bumps and sleeping policeman which can cause damage to cars
- Faster response to complaints, more communication on plans for road maintenance and liaison with utilities
- Faults should be done before they get too bad
- For the money being given to TfL from road tax revenue needs to be better spent. I've got to pay money and for me to pay more on top of the upkeep for my car due to bad road repair, like the road humps you can bounce over them even at 20 miles per hour then you can go down another dip and the products they use for road repair are inferior and they re open too soon after repair and why they crack again even more so in extreme weather and its a vicious circle
- Generally good, but in winter, that is when the surface gets really bad, especially after a really bad spell
- Generally very good, but repairs after snow/ice damage could have been quicker
- Get rid of potholes. Are left for too long. Are not dealt with quickly.
- Get the repair jobs done quickly, better for motorists generally
- Get the repairs done at night so it's ready for the next day, and pay the people decent wages to do it
- Go to Germany. No roads are like this. Why are we like it in London? Will it be good in 2012? Does not give a good impression of the UK especially during the Olympics if the roads are in poor condition.
- Has lots of pot holes, need repairs
- Having lived on the Red Route for 25 years there has been no major repairs to the whole road surface .(Kennington Park Road is where I live). There are problems with iron works and cracking, subsidence etc
- I am presuming that safety considerations are taken into account when TfL are planning their work eg if cracking at 30% is deemed unsafe then that will be the level that TfL will use.
- I am worried about the potholes as a driver, its dangerous
- I didn't know that they didn't maintain them.....I remain unconvinced in rush hour that there is any monitoring of people parking on Red Routes, and people still think they can drop people off on a Red Route
- I don't like it when you leave the lights when there are two lanes going into one lane which forces a car driver to compete for the road.
- I feel more emphasis should be put on repairing roads because cars are being damaged.
- I feel they take too long to maintain the roads generally.

- I have a big problem with cyclists from the viewpoint of being a car driver and a cyclist. As a driver the volume of cyclists on the road make it very difficult to drive. You end up tailing back behind traffic lights...cyclists are probably more vulnerable to road surfaces, and their cycling may be more erratic due to trying to avoid these problems.....I live on a Red Route and cycling can be rather scary.....as a driver Red Routes are meant to be free flowing and fast moving

- I have noticed a lot of fretting on road earlier this year in the bad weather

- I haven't seen any TfL road works around here at all. My suspension is suffering and tyre pressure suffers as well

- I think it's quite good on the whole. I think TfL should have powers over utilities when they are blocking traffic

- I think potholes should be covered as a matter of course in the maintenance plans.

- I think potholes should be filled sooner, but also left to set longer so it does set

- I think that cyclists are a hazard to me as a car driver as they don't seem to follow the Highway Code and they cycle on both sides of my car. I would like to see proper cycle lanes not just ones that go for a short distance.

- I think that I see a lot of works, but the quality of the works are very poor.....therefore, the tax payer ends up paying for the same work several times, and the disruptions increases costs and drivers frustration.....

- I think the condition of the roads is terrible

- I think they are doing a good job with the traffic flow

- I wish they would repair the roads, some seem to need repair for a long time

- I would like the Red Route to be increased as much as possible.

- Ideal if they done it as soon s it occurs otherwise it costs more money and ruins your car as well

- If repairs are done earlier they won't get so bad and the road won't be dug up holding traffic up

- Improve road repairs sooner rather than later. Perhaps do repairs at different times: late at night rather than during the day. They could consult people about the convenience of local repairs

- In general the quality is not good enough. The bus makes the tarmac dent down especially when hot

- Ironworks should be followed up straight away, its very important

- It could do with a serious update, condition very bad

- It is extremely important to get the roads in a good state. Consideration to vehicles should be given more priority.

- It would be better on double red-line routes to stop providing parking spaces. Parked cars invariably cause additional chaos at busy driving times. Also, cyclists should be made to obey red traffic lights, especially at pedestrian crossings. I have narrowly missed being crushed by London cyclists when crossing at such places, when, as a pedestrian, I had the right of way. The cyclists - there were two - were very abusive to me!

- It's a mess.....Shooters Hill towards Welling, there is a great big dip, dangerous, bad for the cars.....that area is not big enough for a bus lane.....the pedestrian crossings should be further away from each other, and they seem to be on for a long time, on the bus route to Queen Elizabeth Hospital near a nursery.....

- It's better than most roads I travel on

- It's poor quality compared with the rest of Europe, especially for two wheel users

- It's pretty ok for motorists but not so good for cyclists

- It's seems in fairly good condition, the Red Route anyway

- Just need to be maintained more frequently and to a good standard

- Just the waste of money when they dig them up at different times, which is bad

- Keep on top of it then it should not cost to much money… and not to much disturbance then not such a big job

- Keep properly maintained, these are the major routes.

- Keep road lines, eg. cycle signs, bus lanes, general signage, clear to all

- Maintenance should be focussed on the areas of greatest wear like pedestrian crossings and roundabouts because of the safety risk.

- Making all the repairs smoother

- More bike lanes, improved ironworks

- More inspectors about to check roads and community of the area checking roads and reporting bad defects to the local council to inform TfL

- My last car purchased was a 4 x 4 with the decision partly due to the conditions of the road...

- Not happy about the condition of the roads at all, the areas that have been rectified have not been done properly...

- Not that bad, resurfacing outside my road so they are doing something

- Not well managed, speed cameras are in wrong locations. Not enough red light cameras to stop motorists running red lights. Not enough work to improve bus lanes
- On the whole I think it is pretty good.
- On whole fairly well maintained but some bus lanes are dangerous ie Newington Causeway
- On the side roads many pot holes still not been filled eg Grosvenor Road, W4 major road, Sutton Court Road meets M4, flooding at junction
- Poor initial construction is responsible for all these problems.
- Pothole on the side road should be fixed.
- Potholes are destroying the cars.
- Potholes are not filled quickly enough and they get much bigger and damage the car. Speed bumps are too high and they are not marked
- Potholes are the worst to damage cars and dangerous
- Potholes need attention – they weren't mentioned. If defects mended properly in first place it shouldn't happen
- Potholes need attention …. they damage my wheels
- Potholes need repairing
- Quite acceptable to me, for the times I am driving on a Red Route, though extremely crowded
- Road works always seem to be done in school holidays
- Road works need to be done to a higher standard
- Roads need improvement urgently
- Roads need to be repaired quicker
- Roads should be checked and repairs done before they become a real problem
- Roads should be in a far better condition considering the amount of taxes and cars
- Since the snow there seems to be no improvement in the pothole situation yet when will they be done?
- Since the winter the potholes have got worse and worse and have not been repaired. They are very dangerous as road users try to avoid them or thump into them.
- Speed bumps damage suspension
- Speed bumps removed, western extension congestion charge has to be removed.

- Stop rushing road works between January and April, spread through the year
- TfL need more money for repairs the roads have got worse since the bad weather
- That the roads are not too bad, but always room for improvement. The main problems are potholes really, due to the wear and tear on the suspension and tyres
- the A20 is a terrible road, under theM25, the fretting problem on the town bound side
- The amount that the roads are being dug up is part of the problem, more communication between the utilities.
- The fretting is very widespread there is lots of this around and it causes a lot of wear to the tyres
- The main roads are good but the side roads are bad
- The marking of the Red Route and double yellow lines they should have tighter checks on people illegally parked on Red Routes and the yellow lines, it slows the traffic we don't need an extra obstacle on our journeys.
- The pot holes are dangerous for all road users and does a lot of damage to cars. TfL could take some financial responsibility for damage
- The potholes are appalling after the winter
- The potholes were damaged by the snow and they have not really been repaired. Too many roads end up need repairing
- The raised ironwork is even more dangerous than sunken ironwork
- The road network was taken control of by TfL. The main problem was before TfL took over, lack of maintenance. Road tax money should be earmarked for road repairs & on-going maintenance.
- The roads are below standard
- The roads are generally quite good
- The roads are in bad condition from the snow they have taken a long time to sort out costing drivers a lot of money in repairs
- The roads are much more dangerous to drivers than a year ago because of the bad winter and get rid of half the road humps as well
- The sleeping policemen, the wear & tear they cause on the vehicles. They are a necessity but they are not necessary everywhere. I don't think maintenance is too extensive, its not short enough for minor repairs.
- The thermoplastic paint that they use can form a skiddy surface that is dodgy in the wet

- The Walworth Road needs doing.....at the Elephant railway bridge end.....terrible there on the bend, if you do not know it and you hit the rut, can be dangerous.....it's the side approaching the Elephant from the Camberwell Green Way.....the Haygate traffic lights, a thumping big dip in the middle of the traffic lights, and it is not caused I think by the buses.....

- The work is done very well but does not seem to last long

- The work takes too long which affects traffic, therefore the length of journey time, especially when going to work, and not knowing it was happening on that day

- The worst are the depth subsidence; some speed bumps are too high.

- There are massive potholes in Bromley.

- There are quite a few potholes on my journey route. They should make it a priority to rectify it. The longer they leave it the more damage it does to the car.

- There is no consistency between the utilities, the road works all seem to be one after the other, better co ordination needed

- They are better than the roads back home, South Africa

- They are disgusting very bad

- They are doing a good job considering the traffic, winter is the worse driving condition.

- They must improve the road surface quickly

- They should coordinate between all the departments, utilities and their own departments.....on Mitcham Road for the past four weeks there has been problems....why cannot we do necessary repairs at night.

- They should fill all the potholes in.

- They should inspect the roads more often

- They wait too long to intervene and they don't seem to have the logistics in place before they start the job, they don't seem to have the materials in place before they start the work then we have to wait a few days, also not enough warning of road works. You can go out in the morning – fine, when you come back there is roads works.

- Think it is pretty good network, good. Too many cars

- Too many road works.

- Traffic lights at the junction between the A316 and where Staveley Road and Riverside Road in Chiswick regularly taking children across this point, London W4. This is a spot where lots of children and pedestrians walk and cross at this point, and in my view - the length of time allowed for pedestrians is too short, and regularly

people who cannot run, find themselves only two thirds of the way across. This junction in my view is dangerous.

- Utilities working together so the road is not continuously dug up repairs should be completed to a better standard

- When there is road works, hard to travel. Would like maintenance at night

- When they do works, if they could do it overnight, so that there is no interference to drivers.....

- When they re-surface the road, doesn't always guide the water to the drains.

- When utility companies dig up the road and re-fill the area TfL should specify the quality of tarmac they put back and also the amount of time spent tamping it down.

- Who do you contact when you notice a problem? Transport for London or local authority

- Why is potholes not on the list? Condition of cycle routes and the area of road the cyclists use should be prioritised.

LGV driver comments (23 out of 58)

- Always seem to be working on them but not getting far with the repairs. Always hold ups on London roads with temporary traffic lights

- Always seems to be lots of roads works in the summer when you are trying to get anywhere

- Considering that England has a huge pot of money to spend on public services, the roads are in a pretty bad state.

- I believe the country has no money but, I don't want to be rude, but they should look and see who they are giving the money to … all the immigrants that they keep moving in taking all the jobs and all the Government's money

- I believe the roads have improved over the years and the carriageway is a lot better than years ago and more money is being spent on different things but I do feel more could be done but the TfL have not got the resource or the money to do these things that need doing

- I want to see the roads repaired immediately when problem identified

- It is always wise to get the problem fixed in the beginning rather than intervening in the worst conditions as it can cause accidents, it costs lives and it causes severe disruptions and time as well as money

- It's always good to maintain good standards and get work done once. Specially when there is no cooperation between the gas, electric and all other companies they keep digging on and on making the surface weaker

- Just want the roads to be safe and well maintained

- Maybe there should use stronger materials and cover the whole area instead of part repairing it. It would last longer
- More attention should be paid to them, as they are fast roads
- Must be maintained as soon as they get problems.
- Need to repair roads more. They always put out signs but the work is never done till two weeks later, and, of course, traffic jams
- Reduce road tax and repair ???
- Road works can be done at night, should not disturb the day time traffic, I am the tax payer so I need the road works not to take long
- The parking designations just hold everyone up. Roads are overcrowded anyway
- The roads are bad but it is hard to keep up as the flow of traffic in London is high and the lorries that came into London are heavy
- They are shit, it's all very well doing all this work on the roads but all the congestion it causes and why can you not do all this work in the evening when the road is clear
- They need to spend more money on road improvements.
- To not do patch work, to redo the whole lot as it would last longer and use a harder substance
- Too many road works going on in the summer. I know they have to be done but it seems to be all along the roads stopping and starting
- When they repair, they should do them properly as they always need repairing quickly afterwards as they crack up quickly
- Where I live is pretty good but some areas of London are bad but they can't repair it all

HGV driver comments (7 out of 16)

- As I am a grab driver I like the road work …as my jobs depends on work being done. Lots of my work depends on the roads and the conditions of the roads
- Croydon area needs more unloading bays for HGVs. Whole of Croydon – only 2 bays for HGVs
- I think the roads are so much better than they were and a lot of people do blame the HGV drivers for the bad roads but if TfL kept them all up to scratch the roads would not get as bad as they are and if they spend more of the road tax on the roads that would be much better and they need to do all the pot holes and mend the holes before the winter comes again
- Loads of tax goes on the vehicles, we expect it to be good and smooth

- Lower congestion charge for lorries
- Taxes are high and service is poor
- They should make available HGV parking on Red Routes between 9.30 and 4.30

Bus driver comments (4 out of 8)

- Conditions are very poor, should concentrate on conditions
- Organise the work
- Road works is a major problem in London. They completely re-surface the road & then they dig them up again after some time.
- Somebody should regularly survey the road conditions on bus routes

P2W driver comments (9 out of 19)

- Generally pretty good roads
- I hope they do something with this info
- It's poorly maintained
- Keep up the maintenance
- Potholes need attention
- Rutting (which is common) is highly dangerous for motorcyclists because it completely destabilises the bike; the more powerful the bike the more this effect. They should also measure the amount of oil on the red routes because this is very dangerous for us. They need to develop white road markings that don't cause motorcycle tyres to slip.
- They need to fill the potholes
- To whom it may concern, I do realise that the paint on the red routes must be replaced frequently, but once the paint is overlapped frequently it creates an unlevel surface which results in motorcycle and bicycle wheels slipping when they drive over the surface. In addition, I am VERY happy that motorcyclists can use the bus routes, but if there could possibly be some research made into creating less slippery paint for road surfaces that would be very helpful, as they are slippery and dangerous.
- Work during night not day for repairs if possible to keep traffic flow

Cyclists' comments (122 out of 203)

- All aspects need looking at because of some of these local Red Routes are terrible. Our safety is very important also it's very expensive to keep replacing wheels and tyres caused by damage

- Any holes should be repaired as soon as possible
- Anything where there is an uneven surface is a danger to cyclists
- Around the bus stops the rutting is especially bad, and where there is flooding and deep cracks, it is a massive hazard for cyclists.....considering that we are helping to save the planet, our needs should be met....I am glad that they are taking steps to address the dangerous roads of London for cyclists.....
- As we are encouraging more bikes it would be useful if repairs would be done as a matter of urgency as otherwise people go back to use public transport
- Be nice to have more consistent and longer cycling routes.....that are more visible to all users of the road.....I am bothered by cyclists who fail to comply with the rules of the road endangering themselves and others.
- Condition of road very bad for cyclists, they need more cycle lanes.
- Consistency with cyclists on the cycle paths and at junctions...at some junctions the instruction different from others and cycle path suddenly ends in other places
- Cycle paths disappear; you start cycling then they have parking bays so you have to go out into the road. Cycle paths can be on pavements at schools to encourage children to cycle to school with or without their parents, just one side of the road so pedestrians can walk on the other side.
- Cyclists feel more on the roads than drivers
- Defects that affect cyclists are not repaired as fast as defects that affect motorists.
- Do job properly in the first place and then no need for continual repairs
- Do something about all the holes in the road
- Due to the heavy traffic in the city there should use smaller lorries or a better route. Use better materials, stronger materials
- Enjoy the new cycle paths. The blue ones. All generally good. You can glide easily.
- Everything is fine, need to work little bit more on parking and must widen the roads
- Faster repairs after a winter like we have had. Better quality repairs
- Fretting needs urgent attention on most of the roads I cycle along.
- Glad you are going to do something, would like to see this road here improved as its bad to ride on
- Green Lanes, the area near Harringay, near Sainsbury,s is extremely bad and very dangerous for cyclists ….
- Have to get some people to solve the problems of road conditions.

- I am encouraging my daughter to cycle to school but it’s very dangerous in parts
- I am generally impressed with the condition of the Red Route in my area for cyclists.
- I avoid some roads because they have so many potholes. Some restaurants put rubbish on pavements and grease seeps out making pavements and roads slippery
- I cycle on bus routes, I find it safer
- I do feel that potholes should have been mentioned in this survey. They are a source of serious danger to all road users but particularly cyclists.
- I feel there should be more emphasis on complete cycle ways rather than the odd 20 metres and then back on the road.
- I find it quite dangerous vying with other road users. There needs to be many more unique cycle routes and motorcycles should be kept out of cycle lanes. The new 'blue routes' are rather odd. They seem to have been already tarmaced over and parking spots made in them. Road surface is very important and needs to be maintained constantly.
- I have come off the bike a few times because of the potholes
- I like using bus lanes because I feel really safe because it is smooth most of the time.
- I recently had an accident on the roads in London and broke my wrist due to excess fretting which created some potholes in the road.
- I think for cyclist they should look nearer the pavement
- I think learn from other European countries, especially in the winter we don’t cater for bad weather.
- I think the roads should be maintained to a higher level.
- I wish potholes dealt with straight away ...and done properly, not a bodge job
- I would like to know if it is cheaper for TfL to act quicker on smaller defects than repair once severely damaged. Additionally, I would like to know if they had a hotline or website to report potholes and cracking for cyclists. If TfL had a hotline what would be the timeframe for repair?
- I would prefer to see more sound and safety barriers along the Red Routes.
- I’d be interested in the length of time between incident being reported as to when the repair is completed
- If road laid properly in the first place this would not happen. Also highway inspectors should be more aware and act before it gets too bad
- Improve everything quick.....

- In the last ten years the roads have got worse. All the ironworks and flooding have become hazards

- It annoys me that designated cyclist path have speed bumps that cyclist cannot avoid. On occasions when I take the bus on the Red Route the parking and loading are not controlled enough.

- It has all been covered

- It is a good thing that we are doing research on this problem as it shows that TfL is aware that there is a problem. And I hope the research will produce results

- It is really terrible, constantly looking out for defects in the road all over the Red Route.

- It seems it would be cheaper to tackle and repair at an early stage – more cost effective

- It should be done as early as possible especially the sideways and footpaths along the road

- It would be nice to have some cycle lanes that are quite wide as they tend to be narrow.

- It's important job you are doing here

- It's nice to know that TfL do take our opinions for consideration

- It's takes too long for the roads to be repaired

- Join lines when utility firms have sealed up their work areas should not be made using smooth, glossy epoxy. These can be very dangerous for cyclists as there is no traction on these black lines: particularly in wet or frosty weather.

- Just keep on top of repairs and fix as soon as it goes wrong

- Just the wear and tear

- Keep the cycle lanes in good repair

- Less road works

- Make the roads wider

- Making cycle lanes wider to keep us safe

- Maybe more cycling lanes.....more places to lock your bikes

- More bicycle routes, potholes filled, more driver awareness of cyclists.

- More bike lanes and the surfaces maintained to a good level

- More cycle lanes

- More cycle paths, cars make the damage to the roads, cycle paths need less maintenance
- More separated cycle lanes
- More special cycle routes in Red Routes area will help
- Motorbike take up the space at the lights which I feel should be for bikes only
- Motorbikes should have their lane, they are dangerous for cycles, or they should not overtake cycles
- My biggest problem is the ironworks
- Need to sort out Upper Street. Just outside Angel Tube next to Pentonville Rise crossroads. Road condition is lethal.
- No pot holes, more bike lanes
- None - what are the blue lines for?
- Not enough room on the roads for cyclists, pavements too wide
- Oil spillage can be a problem which should be cleaned up asap.
- Pockets of bad areas, they should have priority
- Potholes, tend to be in the cyclists path.....and you have problem trying to avoid them in the traffic, or go over them and get a nasty jolt, can affect the balance, and in the wet, cannot see them always
- Potholes are a constant problem. Complaints are not taken seriously and on the rare occasions when TfL repair them it is not always done efficiently. Utility covers are often badly set in the road, or replaced after road works, and these often cause accidents for cyclists.
- Potholes have not been mentioned, which are very uncomfortable for cyclists
- Potholes should be repaired, as a cyclist I find it very dangerous. You can fall off the bike
- Prefer better condition of roads
- Really poor roads. We pay a lot of taxes and nothing is done and congestion charges
- Risk assessment of any road damage, which should include location of hazards. Priority should be given to any damage that cannot be avoided easily without having to go into the path of other vehicles / risking accidents.
- Road users advanced warning signs, like keeping the signs where there are temporary works going on.
- Route to Westminster is very hazardous with all those conditions shown

- Some people should work the weekend and at the night to fix the problem
- Some roads such as Southwark Bridge Road into the city never seem to be without some sort of road works.
- Some roads too narrow for cyclists especially sharing a lane with the buses
- Tell the bus drivers to have a lot more respect for the cyclists, lots of problems in Whitechapel area with this.....the ironworks, lots and lots of sunken ironworks, I have had an accident due to this
- TfL has a long way to go before the surface is satisfactory
- TfL should introduce more safety measures for cyclists
- The big lorries damage roads
- The bus lanes should be 24 hours. Take away the parking boxes.
- The condition of our roads are a disgrace. Having just spent time in France and Italy even with the remains of bad snowy weather, their roads were something we could only wish or dream of.....
- The introduction of good condition cycle paths with non slip surfaces would be a great improvement to the existing cycle specific paths.
- The major issue is potholes, lack of cycle lanes, cars parking in cycle lanes, cycle lanes suddenly stopping and disappearing. Barriers between cycle lanes (like the Netherlands)
- The major issues are potholes; they can suddenly throw a cyclist and could potentially cause a serious accident, cyclist being hit by car, as he or she is thrown.....
- The new cycle network puts the cyclist into thinking it's safer than it really is, buses and cars go over the blue line
- The new cycle routes on the A3 are very good. I'd like to see this across the Red Route.
- The potholes and uneven road improved
- The potholes can be really bad and I'm surprised there's not more accidents
- The potholes need urgent attention it's very bad for cyclists in Chiswick
- The recent blue routes that have been introduced have a very smooth surface. I am now avoiding cycling on them, due to fear of oil causing a very slippery surface in the wet.
- The roads are bad, too many humps and bumps, in cycle lanes have drains, which are not flush, and are dangerous for a cyclist....

- The roads are not that bad, quite good, sometimes the lines need to be painted you can't always see them can't see the stopping lines

- There are too many pot holes. Everyone is always trying to avoid the road defects and this causes cyclists to swerve out of the way and potentially crash into each other or swerving into the oncoming traffic. I had a pretty severe cycling accident which was caused by a crack in the road which I couldn't see as it was dark and raining, it buckled my wheel and damaged my bike.

- There is often broken glass left on the road which is not cleaned up.

- There is so much work at the moment, awful lot being done at the moment which is hard on us

- There should be a Government fund to pay for bust tyres

- They are not very safe places to use for cyclists. I would like to see dedicated cycle paths and areas reserved on the pavements.

- They need better cycle and more cycle lanes

- They need improvements you have to concentrate on the condition of the road as well as traffic

- They should put more money in if they want people to pay congestion charge. They should not just do it for the Olympics but for the people living here.

- This area is not so bad for the road condition but north London is a nightmare

- To think carefully re making the roads more user friendly for cyclists as part of its green commitment.

- Too many road works all the time, needs to be more organised

- Try to improve the roads but do they have the money? Please improve the flooding for pedestrians

- Usually things fixed quite quickly for a big city

- We should ride on the path without being fined £30

- We want to be safe on the road so we need more cycle lanes improvements. Holes to be made good more of the time. Potholes to be fixed so we don't get bike damaged. Stop the wheels from buckling so the roads fixed better, especially the holes

- What about potholes, they are dangerous …also cycle lanes. They need to have more

- Work on time

- Would like more cycle lanes. Review the sign for cyclist at traffic lights

- Would like the Red Routes to have more cycle paths, and wider.....it's the white vans and lorries that cause the problems for cyclists.....number of times I have been nearly knocked off bike by a white van, etc are too numerous to mention....buses are much more carefully driven.....majority of private cars generally ok.....

Research conducted by Accent