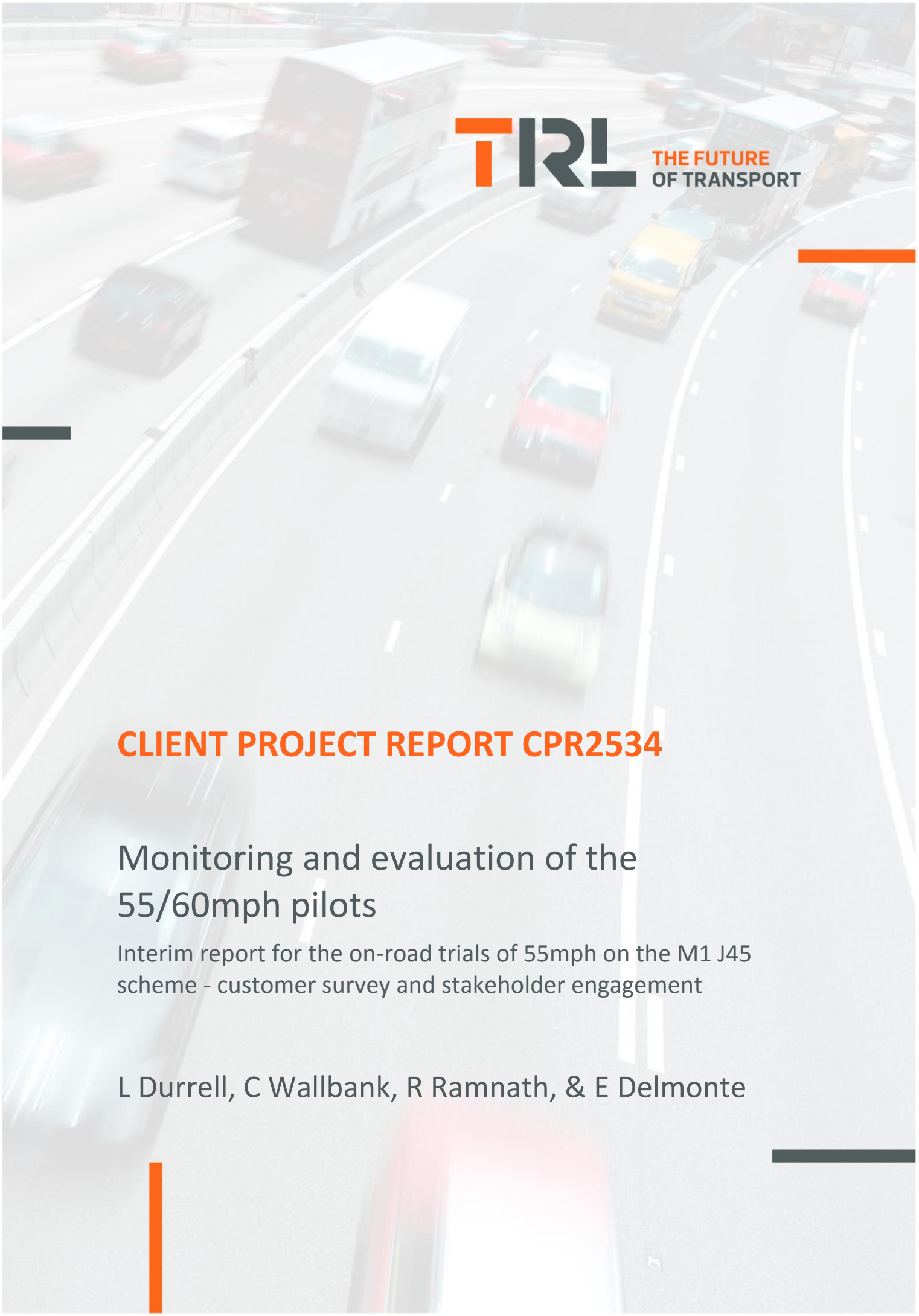

THE FUTURE OF TRANSPORT

CLIENT PROJECT REPORT CPR2534

Monitoring and evaluation of the 55/60mph pilots

Interim report for the on-road trials of 55mph on the M1 J45 scheme - customer survey and stakeholder engagement

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Executive Summary

Improving customer satisfaction, particularly through roadworks, is a priority for Highways England. One potential measure to achieve this is raising the speed limit through roadworks from the current 50mph limit to 55mph or 60mph. This approach aligns with Recommendation 6 from the 'Incidents and roadworks – A road user perspective' report which suggests that "Highways England should set speed limits in roadworks no lower than is required to maintain safety" (Transport Focus, November 2016). This project supports the monitoring and evaluation of trials which involve raising the speed limit through roadworks, where the scheme is designed in a way that makes it safe to do so, and when road workers will not be exposed to increased risk from the increased speed limit.

This report presents the findings from an on-road pilot of an increased speed limit of 55mph at the M1 Junction 45 roadworks scheme that took place in December 2017. The aim of this work was to understand how the 55mph speed limit was perceived by road workers and drivers. Information was collected though an online survey with drivers (which targeted local commuters) and telephone interviews with people who operated within or around the 55mph speed limit zone.

The survey results suggested that drivers were more satisfied with 55mph speed limits through roadworks than 50mph limits; although the results also suggested that changes in speed limit are not the only factors which contribute towards journey satisfaction.

Feedback from people who were involved with the trial was also generally positive, with stated benefits including a perceived reduction in the speed differential between HGVs and other traffic. Some concern was raised over the 55mph speed limit being used in the future; in particular, interviewees suggested that funding would be needed to create a standardised approach for using 55mph and that it could lead to driver confusion and frustration if not used consistently.

1 Introduction

1.1 Background

Customer satisfaction and safety are critical components of Highways England's vision for the future. As part of this vision, Highways England is committed to improving the customer experience through roadworks by maximising safety (for both road users and road workers) and minimising disruption caused by roadworks schemes.

One potential way of improving customer satisfaction at roadworks is to challenge the approach to speed management that is usually taken at Major Schemes. Typically, a 'blanket' speed reduction of 20mph is imposed throughout the scheme, resulting in a 50mph enforced speed limit in place for the entire length and duration of the roadworks.

Following consultation with stakeholders across Highways England and the Supply Chain, this project was set-up to support the monitoring and evaluation of the potential benefits of raising the speed limit through roadworks from 50mph to 55mph or 60mph where the scheme is designed in a way that makes it safe to do so, and when road workers will not be exposed to unacceptable risk from the increased speed limit.

Three specific scenarios were defined for on-road trials:

> **Scenario 1:** Implementation of a 60mph speed limit on lead-in and exits to/from the works, with a 50mph speed limit through the works area
>
> **Scenario 2:** Changing the speed limit (to either 55mph or 60mph) during the operational testing (or 'pre-commissioning') phase of Smart Motorway schemes
>
> **Scenario 3:** Changing the speed limit (either to 55mph or 60mph) throughout the works during a 'holiday period' when there are no road workers present

A speed limit of 55mph is not currently used on the Strategic Road Network (SRN) and so there is limited evidence regarding how this speed limit might affect driver behaviour, perceptions or performance in the vicinity of roadworks. As a result, prior to trials of 55mph on-road, two trials of 55mph were carried out using TRL's driving simulator (Wallbank *et al*., 2017a; 2017b). These studies provided clear evidence in support of trialling 55mph speed limits on the SRN.

The first on-road pilot of 55mph was carried out at the M3 Junction 2 to 4a Smart Motorway scheme during summer 2017.

1.2 Study objectives

This report summarises the findings from the second on-road pilot of 55mph at the M1 Junction 45 scheme during Winter 2017. This is the fifth pilot which has been completed to date; the three other pilots investigated the use of 60mph speed limits.

TRL was commissioned by Highways England to monitor customer satisfaction and to engage with relevant stakeholders to ensure that safety of road workers was not compromised by the increase in speed limit during the trial period. Note that unlike the other pilots, TRL did not carry out any analysis of the data collected on road user behaviour.

This report provides an overview of the scheme and the data collection methodology (Section 2), presents the results from the survey of customer satisfaction (Section 3), presents the results from the stakeholder engagement (Section 3.2) and summarises the conclusions from the pilot (Section 4).

2 Method

2.1 Overview of the scheme

The M1 J45 scheme commenced in January 2017 and was completed in December 2017. The scheme widened some of the entry and exit slip roads, and added in an extra lane to the roundabout, increasing it from 2 to 3 lanes. The aim of the scheme was to improve capacity at the junction which is a major route in and out of Leeds city centre.

Whilst this scheme did not fall into any of the scenarios outlined in the scope of the on-road trials (see Section 1.1), the decision was made to pilot a 55mph speed limit at this scheme because it represented an alternative scenario where increased speed limits could prove to be beneficial to road users, without increasing risk to road workers. Specifically, the layout of the scheme meant that the majority of the works were being carried out on the roundabout and slip roads; however, in order to slow traffic on approach to the works, a 50mph speed limit was implemented on the main carriageway.

During the trial (09/12/17 to 20/12/17), the 50mph speed limit was replaced with a 55mph speed limit in both directions – see Figure 1.

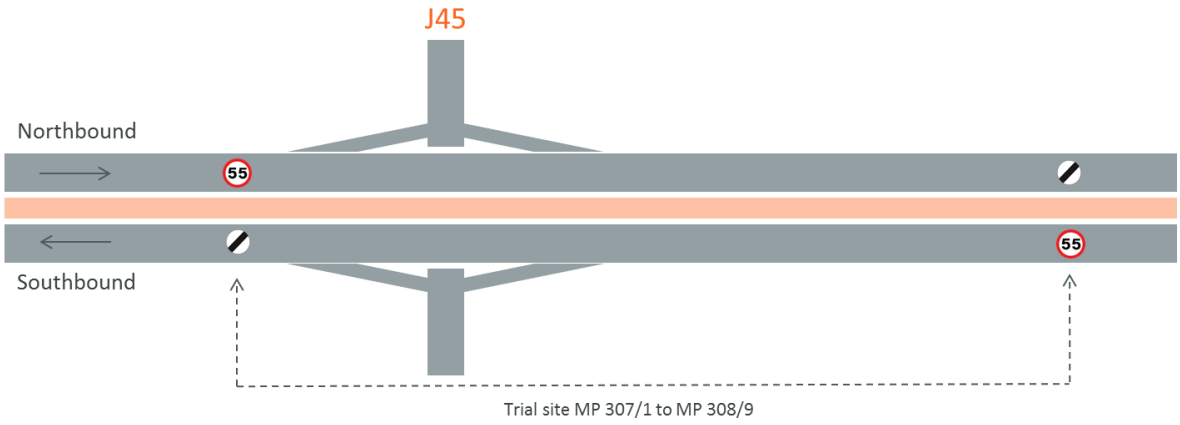

Figure 1: M1 J45 scheme speed limit locations

2.2 Monitoring customer satisfaction

In order to monitor customer satisfaction through the increased speed limit, surveys were carried out with regular commuters through the scheme (recruited from local business parks). Phone calls, emails and flyers were used to advertise the survey. The survey was hosted online. Respondents were incentivised by the offer of entry into a prize draw.

The survey asked about respondents' experience of the journey, whether they noticed the speed limit change, the suitability of the 55mph speed limit and whether the behaviour of other drivers made them feel less safe. The questionnaire is included in Appendix A.

The results from this survey are presented in Section 3.

2.3 Stakeholder engagement

To meet the objectives of this study a qualitative research approach was required; this ensured that the topic could be explored in depth and that detailed and unbiased feedback could be obtained from key stakeholders involved with the on-road trial of 55mph. Since road workers and other operatives within the highways industry are a difficult group to reach via online or paper-based surveys, the qualitative method which was selected for this study was interviews. A focus group had originally been intended but due to the limited interest and availability of the target group, interviews were used as they offer more flexibility with regards to scheduling.

Interviews allow exploration of the interviewee's unique perspective or experience relating to an issue, providing a more complete insight compared to questionnaires.

The findings from these interviews are not intended to be generalised to a wider population as the views expressed cannot be regarded as representative of all road workers and operatives; nevertheless, this study allowed a deeper exploration of the impact of the 55mph pilot scheme on behaviours and attitudes of key stakeholders which can be used to enrich the findings from the on-road trial.

As part of the interviews, results from the on-road trial were presented to the participants to disseminate the key findings and lessons learned, and provide operatives with the opportunity to ask questions about the results or add comment.

Two interviews were carried out[1]; one with a construction site agent and one with a traffic safety control officer (TSCO).

The interviews were carried out by a TRL researcher. A topic guide was developed to guide the discussion and ensure that all relevant issues were covered, whilst providing enough flexibility to facilitate open discussion. Where necessary, the researchers probed particular areas of discussion using pre-defined prompts in order to explore topics in further depth, yet without leading the responses of the interviewee. The format of the topic guide was as follows:

- Discussion of trial involvement and expectations
- Brief presentation of driver survey headline findings
- Perceived effect of trial on driver behaviour including incidents/near misses
- Perceived effect of trial on works activities
- Suggested improvements and drawbacks related to the trial

The interview guide is included in Appendix B.

With participants' permission, the discussion was recorded using a digital voice recorder (DVR). Notes were taken by the researcher during the discussion.

[1] Four interviews were scheduled but due to participant availability only two were completed.

2.3.1 Data analysis

The interview notes were used to carry out Inductive Thematic Analysis, which aims to identify patterns of meaning across a dataset, involving the following steps (Braun and Clarke, 2006):

1. **Familiarisation with the data**: Reading the transcript to become familiar with the data.
2. **Coding**: Concisely labelling features of the data that might be relevant to the research aim. The whole transcript is coded, and the codes and relevant data extracts are collated.
3. **Searching for themes**: Examining the codes and data extracts to identify significant patterns of meaning (i.e. potential themes).
4. **Reviewing themes**: Checking the potential themes against the data, to determine that they accurately reflect the data and answer the research question(s).
5. **Defining and naming themes**: Working out the scope and focus of each theme.
6. **Writing up**: Synthesising the narrative and data extracts.

3 Results

3.1 Customer satisfaction

3.1.1 Participant sample

Despite many efforts to recruit commuters through the trial site, only 32 people completed the online questionnaire. As a result, caution should be taken when interpreting the results in this section since they are based on a small number of participants. However, the results are largely similar to those from the previous trials.

The sample consisted of 12 (38%) females and 19 (59%) males. One person did not state their gender. The largest group of participants (14, 45%) were aged 25-34 years.

Almost all of those who participated in the survey were car drivers (88%), while a small proportion reported driving a light commercial vehicle (6%) or heavy goods vehicle (3%). One person did not respond to the question[2].

Figure 2 shows the journey purposes reported by the sample.

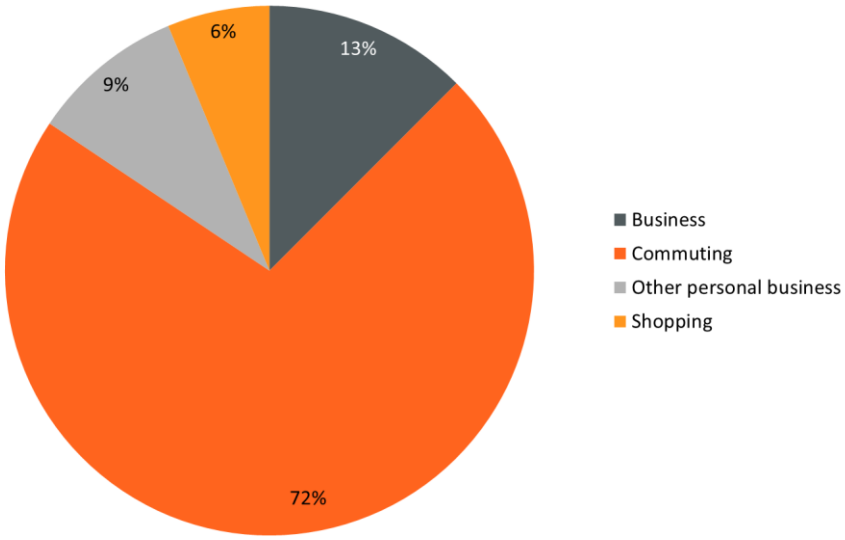

Figure 2: Reported journey purpose

For those who completed the survey, the most common stated purpose of the journey was commuting (72%), followed by driving for business (13%). Other purposes were personal business (9%) and shopping (6%). This is likely to be a result of the survey distribution method which targeted local businesses.

[2] The survey contained mandatory questions that ensured people were eligible to take part and had provided consent. All other questions were not mandatory. This meant the survey met with the Market Research Societies prize draw regulations.

3.1.2 *Experience of roadworks*

Participants were asked three questions about their opinions of the long term benefits of the roadworks. The results are shown in Figure 3.

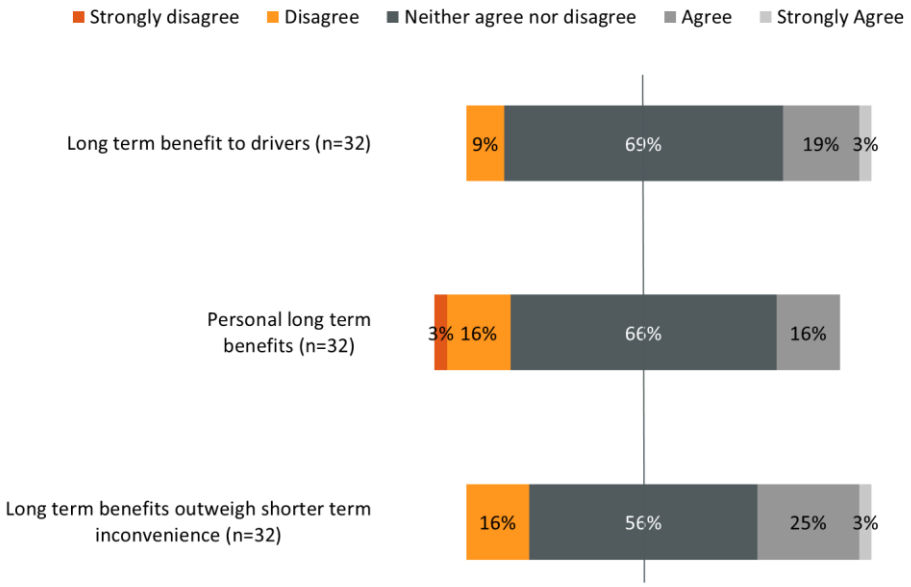

Figure 3: Responses to questions about long-term benefits of roadworks according to regular and occasional drivers

The majority of participants had a neutral opinion in terms of whether they felt the roadworks would provide any benefit to them. This may be related to the position of the junction improvement works and the targeted sample for the survey: in order to reach people who drove on the 55mph section during the trial (which was located on the main M1 carriageway), it is unlikely that many frequently use the motorway junction being upgraded.

In total, 22% of the participants believed that the roadworks would provide long term benefits to drivers whereas only 16% of participants agreed that the roadworks would provide long term benefits to them personally, and 28% of participants agreed that the long term benefits of the roadworks would outweigh the short term inconveniences.

3.1.3 *Understanding of the speed limit*

As part of the survey, participants were asked whether they noticed the speed limit signs through the roadworks (Figure 4).

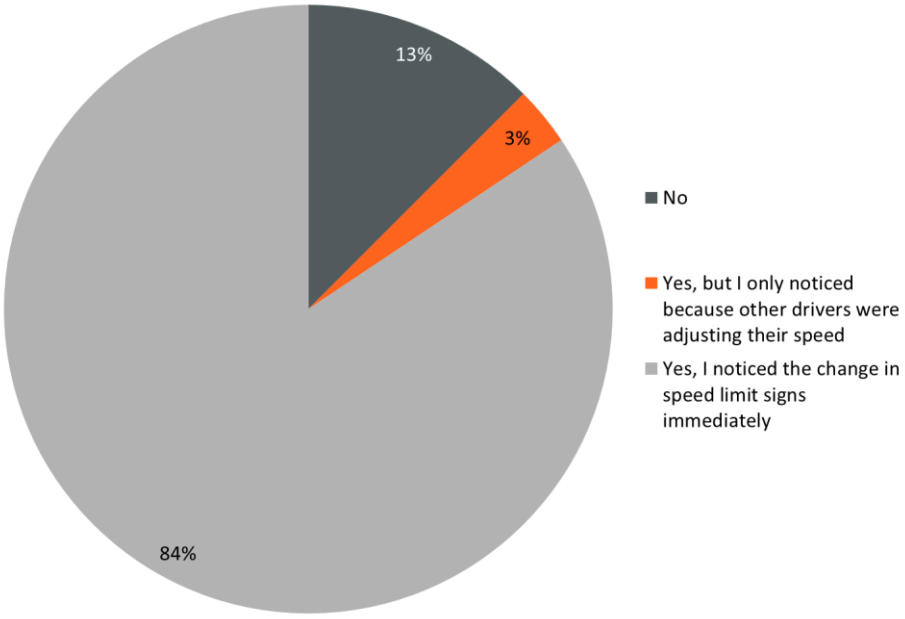

Figure 4: Drivers' awareness of the speed limit change through the roadworks

The percentage of drivers who immediately noticed the change in speed limit was high (84%), while 13% of drivers admitted to not having noticed a change in the speed limit.

Some of the drivers who felt that the 55mph limit affected the way they drove explained that this was because different drivers were driving at different speeds (some higher than 55mph and some lower):

> *"Some drivers are still doing 50"*
>
> *"Other drivers seem to think the 55 now means they can get away to do 60 so all the traffic (me included) ended up going faster."*

Others felt that the 55mph speed limit had a positive effect on their journey:

> *"I drive through these road works twice a day five days a week, the slight increase has improved flow of traffic so my commute has become more tolerable (slightly)."*
>
> *"55 made driving with HGVs a less threatening experience."*

Participants were asked to rate the appropriateness of the speed limits experienced through the roadworks (Figure 5).

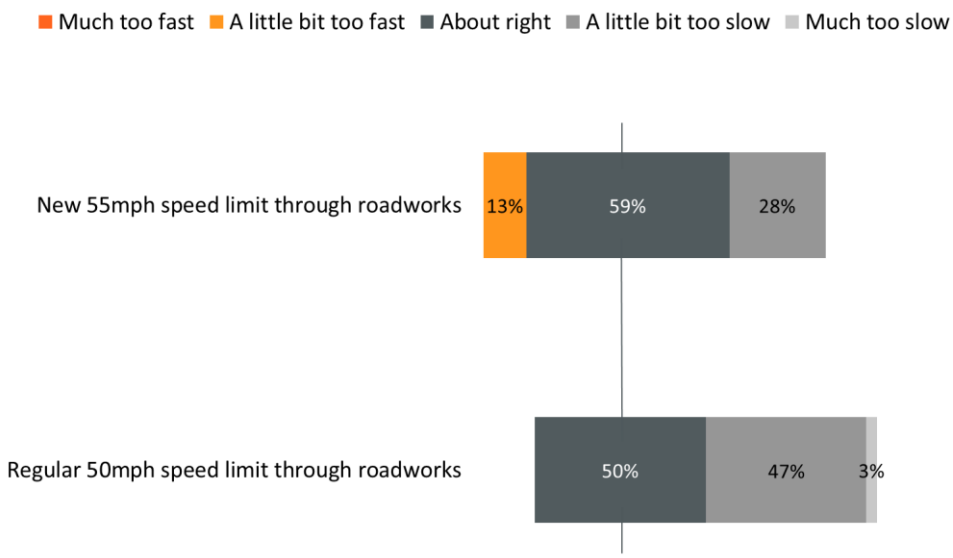

Figure 5: Reported 'appropriateness' of speed limits

The 55mph speed limit was perceived as appropriate by 59% of drivers. Twenty-eight percent of drivers considered the 55mph limit to be too slow while 13% of drivers claimed it was too fast.

Half (50%) of participants thought the current 50mph speed limit was too slow And the other half left that it was about right.

3.1.4 Opinions on the speed limit

Participants were asked what they thought about the use of 55mph speed limits at roadworks on motorways. Key themes emerging from the comments are presented below.

Many participants felt that the 55mph speed limit was an improvement on the 50mph limit. It was felt that the 55mph limit offered improvements in terms of reducing congestion, and 'keeping up' with HGVs which are reported to continue to drive at their limit of 56mph through roadworks.

> *"Excellent idea, should be fully implemented in all 50mph zones."*
>
> *"I feel it's better to have the speed higher than 50 as at 50, it causes too much congestion."*
>
> *"I think this is a good idea, 50mph is a little too slow, especially when HGV's still continue to do 56mph!"*

Some felt that the limit should be increased further to 60mph. Again this was justified in relation to HGVs driving at the 56mph limit.

> *"55 mph is much better but could maybe be extended to 60mph. The reason is that HGVs typically are limited to 56mph, and countless times I've seen cars being pushed along and intimidated by trucks who don't slow down at all, and remain on their limiter, and get annoyed at car drivers travelling slower."*

Others felt that the limit should remain at 50mph. Some respondents found it difficult to check their speed using their speedometer (which typically displays speed in intervals of 10mph). It was also felt that drivers will drive faster than the posted speed limit and so a lower limit is more sensible.

> *"I would like to keep it at 50. One reason I think if I was working on the road works would I like vehicles not to go any faster than 50. The other reason is on my car it's very difficult to read 55 [on the speedometer]."*

> *"I think 50 is better. Now you have changed to 55 drivers think they can get away with 60."*

> *"It is harder to keep a constant speed as there is no guide on my speedometer for 55 miles an hour. This means to keep at a constant 55 miles per hour I have to look at my speedometer more often. The 50 mile an hour limit is much more safe, as I do not have to take my eyes off the road as often."*

3.1.5 Driver behaviour

Participants were asked whether there were any times where the behaviour of other drivers made them feel less safe. A list of undesirable and non-compliant driver behaviours were shown to the participants: overtaking, close following, speeding, mobile phone use, and 'other, please specify'. The unsafe behaviour most frequently reported was 'close following' (39%), followed by 'speeding' and 'overtaking' (29% and 20% respectively) (Figure 6).

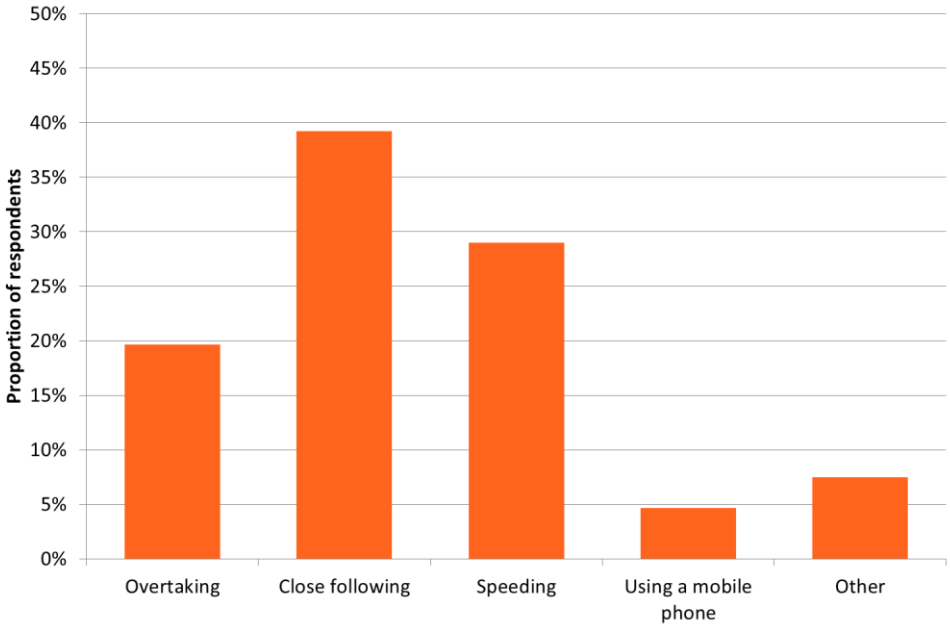

Figure 6: Proportion of participants by observed unsafe behaviour

Figure 7 shows the number of times different types of driver were reported to make the participant feel less safe. If multiple reasons were given for a particular driver type by a participant then this was only recorded once in this chart. For example, if a participant stated that car drivers made them feel less safe because of close following and overtaking then this was only recorded once.

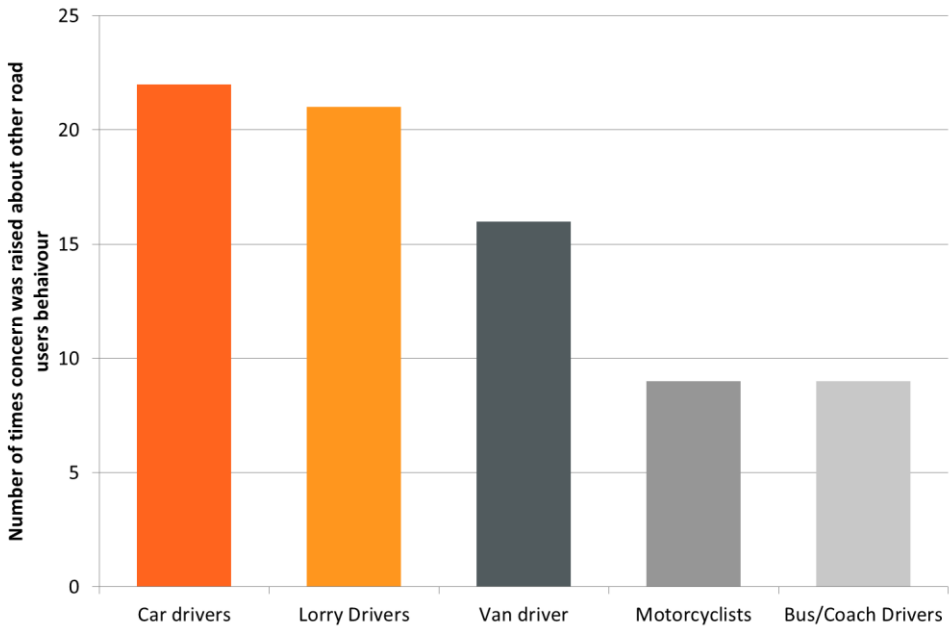

Figure 7: Count of times each driver type was recorded as having made the participant feel less safe

The largest number of concerns related to car drivers, followed by lorry drivers and van drivers. It is worth noting that cars make up the majority of traffic, however, lorry drivers almost had as many complaints as car drivers. The specific behaviours identified for three driver types are examined in Figure 8.

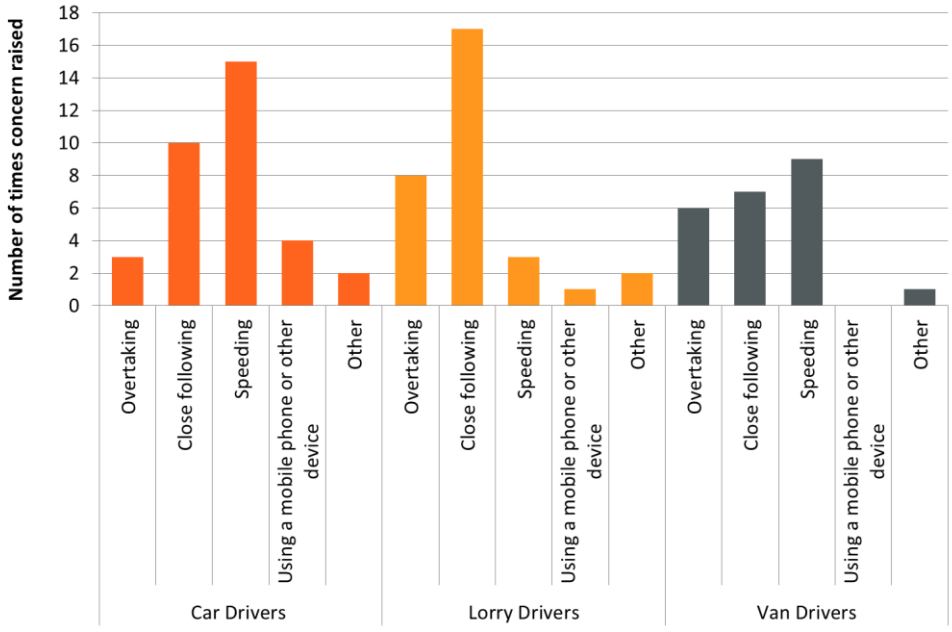

Figure 8: Unsafe behaviour of car, lorry and van drivers respectively

Speeding was the most common unsafe behaviour reported among car drivers and van drivers, but close following was the most common unsafe behaviour recorded for lorry drivers. The other behaviour reported by participants that made them feel unsafe was harsh braking:

"All drivers having to brake hard in advance of the works section due to standing traffic created by the speed restrictions."

"Harsh braking on the approach to the 55mph zone."

"People merging slowly and braking aggressively when they saw the speed limit signs."

3.1.6 Satisfaction

Participants were asked to rate how much the change in speed limit affected their overall satisfaction with their journey. Responses are shown in Figure 9.

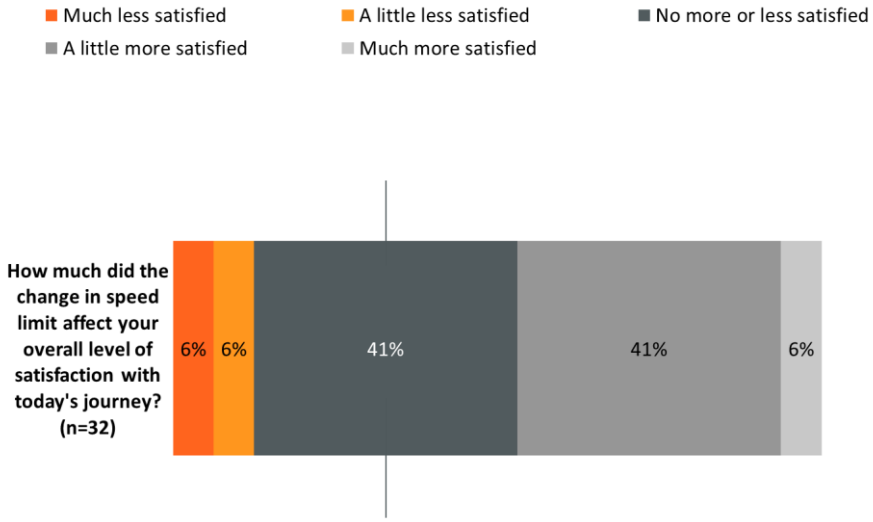

Figure 9: Change in participants' overall level of satisfaction with their journey as a result of the speed limit change

The reported effect of the speed limit change on satisfaction was positive (47%) or neutral (41%) for most of the sample. Only 12% reported being 'much' or 'a little' less satisfied compared with before the speed limit changed.

As shown in Figure 10, the proportion of drivers who approve of the use of 55mph as a speed limit in roadworks is considerably higher than the percentage of drivers who disapprove (72% and 16%, respectively); 13% of the respondents expressed a neutral opinion.

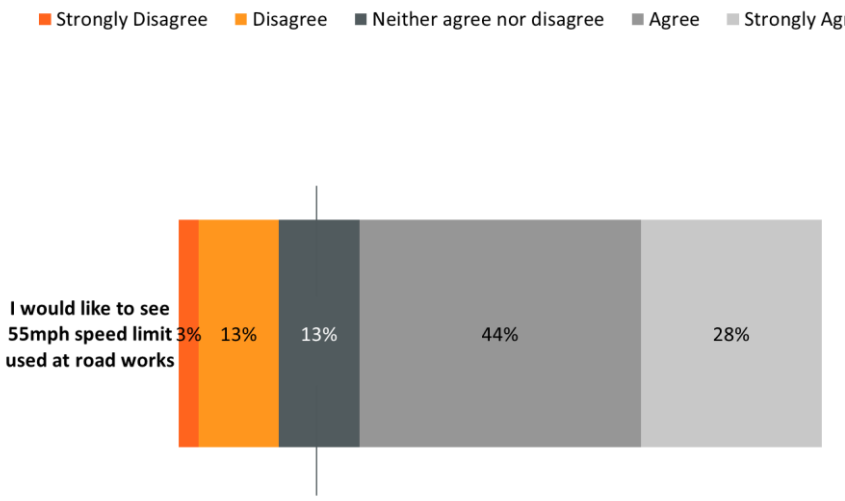

Figure 10: Participants' opinion about having 55mph speed limit at roadworks

Amongst those who would not like to see 55mph speed limits at roadworks, comments generally related to the perception that 50mph is an appropriate limit:

> *"50 is fast enough when roadworks are present and no hard shoulder available plus highway workers alongside."*
>
> *"It [a 55mph limit] is less safe."*
>
> *"Drivers push a bit further, so at 55 the actual speeds will be closer to 60."*

However the majority of participants stated that they would like to see a 55mph speed limit at roadworks. Comments from these participants included benefits for traffic flow and driver wellbeing:

> *"The increase in speed makes a positive difference to the flow of traffic whilst not impacting road side workers too much, I believe."*
>
> *"When minimal workforce are in the road, it's still a safe speed yet moves the traffic through the area quicker."*
>
> *"Over recent years we have seen an increase motorway roadworks and a constant 50mph for miles and miles can affect your responses and you start to feel tired, and a little faster you feel more relaxed."*
>
> *"This gives drivers the option to go at 50 if they desire but also gives them a sense of relief in case the speedometer creeps up slightly!"*

3.1.7 Route preferences

In addition to specific questions about the M1 scheme, the survey also included a short choice experiment[3] to investigate the relative importance of different attributes of the roadworks on a driver's route choice. Survey participants were asked to imagine they were driving from A to B with two possible motorway routes to choose from. Both routes had roadworks but the roadworks had different characteristics.

Each driver was presented with six different questions, each with two choices (Route 1 or Route 2) where the two routes had different attributes (related to the speed limit through the works, length of the roadworks, lane widths and use of speed enforcement). Drivers were asked "which route would you choose?". Each attribute had a number of levels, representing typical scenarios a driver might experience in the real world:

- Speed limit: 50mph, 60mph or 70mph
- Roadworks length: 5 miles, 10 miles or 15 miles
- Lane width: standard width lanes or narrow lanes
- Speed enforcement: none or average speed cameras

	Route 1	Route 2
Speed limit	70mph	50mph
Roadworks length	10 miles	5 miles
Lane width	Narrow lanes	Standard width lanes
Speed enforcement	Average speed cameras	None
Choice	☐	☐

Figure 11: Example question included in the choice experiment: Which route would you choose?

This set of questions was also included in the road user survey for the M5 and M3 pilot (Wallbank, Chowdhury, Fleetwood, & Myers, 2017c). As the questions are not related to specific roadworks schemes, the data for the M1, M3 and M5 survey were analysed independently and compared.

[3] The purpose of a choice experiment is to simulate the decision-making process made by drivers in the real world. When choosing between various alternatives, drivers are assumed to trade-off between the attributes of each in order to come to a decision. The analysis is used to quantify the different weighting consumers apply to each attribute.

The analysis of these data utilised a statistical technique known as multinomial logit (MNL) modelling[4] to estimate the relative weightings (importance) of each of the four attributes. Table 1 presents the results from this model for all three trials. The table presents the coefficient (estimate) for each attribute, along with a significance value showing whether the coefficient is significantly different from zero; where this is the case it implies that the attribute is an important factor when customers choose between routes.

Table 1: MNL model results

Trial	Attribute	Coefficient	t value	Significance
M1 J45 - 55mph (current trial)	Length	- 0.07	- 2.98	Significant ($p < 0.05$)
	Lane width	- 0.77	- 4.72	Significant ($p < 0.05$)
	Enforcement	- 0.35	- 1.74	Not significant ($p > 0.05$)
	Speed limit	0.03	2.61	Significant ($p < 0.05$)
M3 - 55mph	Length	- 0.11	- 9.93	Significant ($p < 0.05$)
	Lane width	- 0.81	- 11.22	Significant ($p < 0.05$)
	Enforcement	- 0.24	- 3.61	Significant ($p < 0.05$)
	Speed limit	0.04	6.85	Significant ($p < 0.05$)
M5 - 60mph	Length	- 0.13	- 6.14	Significant ($p < 0.05$)
	Lane width	- 0.98	- 6.72	Significant ($p < 0.05$)
	Enforcement	- 0.33	- 2.18	Significant ($p < 0.05$)
	Speed limit	0.05	4.80	Significant ($p < 0.05$)

Roadworks length, speed limit and lane width were all significant attributes for each trial and thus can be considered important factors when customers were choosing routes. The presence of enforcement was not significant for the M1 J45 survey results but was significant for the other schemes. This may be due to the small sample in the M1 survey as the coefficients were similar for both the M3 and M5 surveys; the coefficients for each variable have the same direction and a similar magnitude across the three trials suggesting that their relative importance to the choice tasks is not dependent on the characteristics of the trial.

The negative coefficients for the roadworks length, lane width, and enforcement variables indicate that as these variables increase (e.g. as the length of the roadworks increases) the

[4] This technique involves estimating one coefficient for each attribute; these coefficients can then be interpreted to determine which factors are more important in the decision making process than others. Whilst more complex modelling techniques exist, which involve fewer assumptions and allow the weighting of the different attributes to vary between respondents, due to the small sample size and for ease of interpretation, the MNL model has been applied in this case. Further work involving a larger, stratified sample of SRN users could investigate these relationships further, including consideration of further attributes, understanding whether the decision making process differs between different users (e.g. between different driver segments, ages or genders) and investigating non-linearity in the attributes.

likelihood of drivers choosing the route reduces. This indicates that people tend to prefer shorter roadworks, roadworks without narrow lanes, and roadworks without enforcement. For the speed limit variables, the relationship goes in the opposite direction: As the speed limit increases the likelihood of a driver choosing the route increases, suggesting people prefer faster speed limits in roadworks.

Comparison of the absolute magnitude of the coefficients for lane width and enforcement (where the choice for both is a binary option) suggests that lane width is around two to three times more important for route choice than the presence or absence of enforcement.

The interpretation of the length and speed limit variables is slightly different since these are included in the model as linear predictors; here the coefficients represent the effect of a one mile increase in length, or a 1mph increase in speed limit, respectively. The magnitude of the coefficients demonstrates that a one mile increase in length is nearly 3 times more important than a 1mph increase in speed limit.

The results from these choice experiments suggest that when asked to choose between routes with roadworks, drivers felt that the speed limit of the roadworks was the *least* important aspect of the four variables tested. The length of the roadworks, the presence of narrow lanes and average speed cameras all had a greater contribution to driver decisions. These results were similar across the three trials where the choice experiment was conducted.

This might suggest that, in order to improve customer satisfaction, Highways England should also take steps to improve other aspects of the roadworks, including making the length of roadworks shorter. Whilst standard width lanes and no speed enforcement are seemingly preferred by most drivers, it is recognised that roadworks design decisions regarding lane width and enforcement are often made for practical and safety reasons and it may not be possible to remove these at some schemes.

3.1.8 Improving driver experience through roadworks

Participants were asked for their opinions on changes that should be made to the design or management of roadworks to improve their experience of driving though them. Some key themes emerged from the responses, which are presented below.

A common theme from participants was the perception of a lack of work taking place within the roadworks, and information regarding why the work is being carried out.

> *"Actual reasons for the roadworks being done. Although you've probably heard it a million times before it is increasingly annoying seeing no work going on and very little changing. I still have no idea what is going on with the road works and what benefits I will gain for these works."*

> *"You see large sections of Motorways undergoing repairs etc with nobody working but still the 50mph [limit] is in force, this should be adjusted like the smart motorway to take account i.e. if workers are present then 50 or 55 no workers then 55 - 65."*

> *"It never seems to have improved much when completed but I am not an expert on roadworks."*

> *"Information on what's happening and why the roadworks are there."*

The length of the roadworks and associated speed restrictions was also mentioned:

> *"By far my biggest complaint is the length of road works. Often 15 - 20 miles of roads are restricted by road works when only a proportion is being worked on. This causes loss of time for hundreds of thousands of motorists every day, unnecessarily, and causes frustration which in turn can cause irrational driving."*

3.2 Stakeholder engagement

This section discusses the key themes which emerged from the thematic analysis of the interview notes. Where appropriate, verbatim quotes from the notes have been presented to illustrate the themes.

Speed limits need to be consistent

Both respondents felt that speed limits should be consistent, both throughout the length of the roadworks (it "may lead to accusations of deliberately misleading public" and to confusion if 50mph and 55mph zones exist in parallel), and throughout the life of a scheme ("as changing them can cause confusion and irritation").

There is a big benefit of the 55mph limit with respect to HGVs

HGVs are limited to 56mph, and some HGV drivers "abuse" the tolerances of speed cameras to travel at this speed in a 50mph zone. It was felt that the most positive aspect of the 55mph speed limit was "reducing pressure from HGVs" as it "synchronises traffic", allowing car drivers to travel at the same speed as HGVs. This meant that "people were less intimidated by HGVs crowding or overtaking them".

Speed cameras improve compliance with the 55mph limit

Both respondents felt that the speed cameras meant that drivers "stuck to the speed limit". In comparison, prior to the 55mph speed limit there were no average speed cameras on the stretch of roadworks and speeding became a "significant issue".

One respondent felt that the 55mph speed limit becomes "functionally" 60mph because of public knowledge about speed camera tolerance being 10% +2mph of the posted speed limit. It was felt that having a 60mph speed limit in place would lead to drivers travelling at 65mph which would be "creeping back to the national speed limit".

Moving roadworks barriers

Increasing the speed limit above 50mph means that barriers need to be adjusted to mitigate the higher speed, providing road workers with a bigger safety zone which in turn reduces the working zones behind the barriers. It was felt that Highways England would need to "engage with roadworks communities to reduce these inefficiencies to suit 55mph" which would need funding in order to be accomplished, "but is vital to the uptake of 55mph schemes". The reduction in working space behind the barrier was felt to result in "no increase in risk, just far less convenient".

No safety concerns associated with 55mph limit

No safety concerns were raised in relation to the higher speed limit or reduced working space behind the safety barriers. It was reported that the "workforce were engaged" with the 55mph limit.

3.2.1 Written feedback from police

Additional written feedback was provided by a member of the police camera enforcement unit. This respondent felt that, if an increased speed limit is needed, this should be 60mph rather than 55mph. This was based on the following key points:

- Concerns about increased 'back office' work for enforcement authorities, for example dealing with queries from the public and challenges associated with other speed limits (e.g. 'why can't 30mph limits be raised to 35mph?')
- Difficulties for drivers to maintain a 55mph speed as speedometers display speeds in 10mph increments. Maintaining 55mph may be distracting for drivers.
- Issues around guidelines for prosecuting people for speeding, as the nationally agreed standard of prosecuting at 10% +2mph above the posted speed limit would mean prosecuting at 62.5mph, which would need to be rounded up or down. The Police and Crime Commissioners would need to be consulted.

4 Summary and conclusions

The aim of the customer and stakeholder engagement was to understand the perceptions of people who drove through or worked in and around the M1 J45 55mph speed limit scheme.

There were two elements; a road user survey and interviews with road workers.

The survey targeted commuters who regularly use the stretch of the M1 around J45. In total, 32 drivers responded to the survey, caution should be taken when interpreting the results in this section since they are based on a small number of participants. Two telephone interviews were also conducted with a construction site agent and a traffic safety control officer (TSCO). There was a limited response to the interview invitations, however, some additional feedback on the trial was provided by email from other stakeholders.

Around three-quarters of the survey sample were commuters (72%) while the other respondents reported driving though the scheme for business and leisure purposes. The majority (87%) noticed the 55mph speed limit either though seeing the speed limit signs or seeing other drivers change their speed. In general, the 55mph speed limit was received positively with drivers tending to be more satisfied with the 55mph speed limit than the 50mph limit. However others remained neutral about the 55mph limit and some people raised concerns that it was confusing or that drivers were still doing 50mph.

In addition to questions around the M1 J45 scheme and 55mph specifically, respondents were also asked to complete a short choice experiment. When choosing between routes with roadworks, responses indicated that the speed limit of the roadworks was the least important aspect. The length of the roadworks, the presence of narrow lanes and average speed cameras were more important. This was found to be the case across all three schemes where this analysis was conducted: the M1 J45 (55mph), the M3 (55mph) and the M5 (60mph) schemes. Participants also suggested a number of ways to improve driver experience through roadworks: these included increasing the activity of road workers and improving the information provided.

The results from the interviews suggest that stakeholders did not make any substantial changes to the way they worked during the trial. No near misses or incidents were attributed to the 55mph speed limit by the interviewees and some improvements to driver compliance were noted; however, these were felt to be due to the introduction of speed cameras rather than the 55mph speed limit. Both interviewees felt one of the main benefits to using the 55mph speed limit was reducing the amount of tailgating and overtaking by HGVs.

In summary, there is no indication that the 55mph speed limit had a negative impact on road user safety. Although generally positive, the survey and interview results suggest there were mixed feelings around the use of 55mph. Results from the choice experiment showed that the length of the roadworks, the presence of narrow lanes and the presence of average speed cameras were all more important factors in route choice than the speed limit.

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Appendix A Motorway User Survey

This research is being carried out by TRL (the Transport Research Laboratory) on behalf of Highways England. We would be very grateful for your help with the survey (it should only take around 10 minutes) but you are under no obligation to do so and you may stop at any time.

The research aims to improve understanding of driver perceptions of roadworks. There are no 'right' or 'wrong' answers – we are interested in what you think. We may wish to use anonymised quotes from your responses.

If you have any questions about the survey, you can email us at contact@trl.co.uk. This survey is conducted in accordance with the Market Research Society Code of Conduct.

IF YOU COMPLETE THE SURVEY YOU WILL BE ENTERED INTO A PRIZE DRAW WITH A CHANCE TO WIN A £50 AMAZON VOUCHER OR ONE OF TWO £25 VOUCHERS! For the terms and conditions please use the following link: https://trl.co.uk/projects/m1-survey-prize-draw-terms-and-conditions

The survey will close on the 19th December. Do you consent to take part in this survey? *

- ☐ Yes
- ☐ No

1. Have you driven (as a driver, not a passenger) through the roadworks between Junctions 44 and 46 (either northbound or southbound) of the M1 between the 9th and 17th December? J44 (A639 Leeds South, M621) J46 (A6120 Leeds East, A63 Selby) *

- ☐ Yes
- ☐ No
- ☐ Don't know

2. Approximately how many miles was your journey in total?

- ☐ 1-20
- ☐ 21-40
- ☐ 41-60
- ☐ 61-80
- ☐ 81-100
- ☐ More than 100
- ☐ Don't know

3. What type of vehicle did you drive?

- [ ] Motorcycle
- [ ] Car (includes car-derived vans)
- [ ] Light commercial vehicle (up to and including 7.5 tonnes)
- [ ] Heavy goods vehicle (over 7.5 tonnes)
- [ ] Other (please specify):

4. What was the main purpose of your journey?

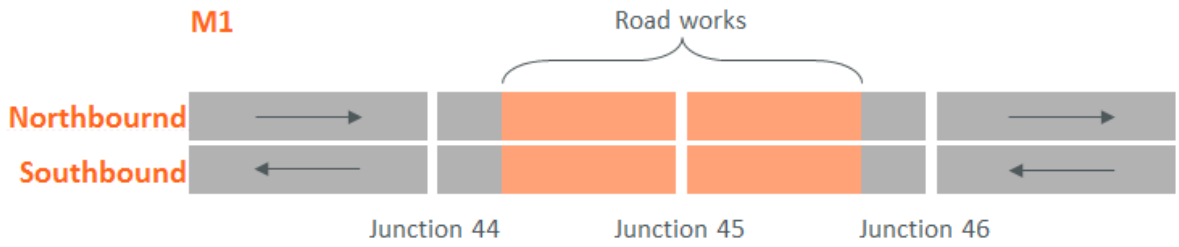
- [ ] Commuting
- [ ] Business
- [ ] Education
- [ ] Shopping
- [ ] Other personal business
- [ ] Visiting friends/family
- [ ] Holiday
- [ ] Other (please specify):

5. Did you leave the motorway at Junction 45? *

- [ ] Yes
- [ ] No
- [ ] Don't know

Please answer the survey thinking about the part of your journey on the main carriageway of the M1 and not about the Junction 45 slip road and roundabout.

The diagram below illustrates where the roadworks are located on the M1:



6. Did you know about these roadworks in advance of your journey?

- ☐ Yes
- ☐ No

7. Typically, how often do you drive on this part of the M1?

- ☐ 5 or more times a week
- ☐ 3-4 times a week
- ☐ 1-2 times a week
- ☐ Once every 2-3 weeks
- ☐ Once every month
- ☐ Once every 2-6 months
- ☐ Once every 7-12 months
- ☐ Less than once a year

8. To what extent do you agree or disagree with the following statements?

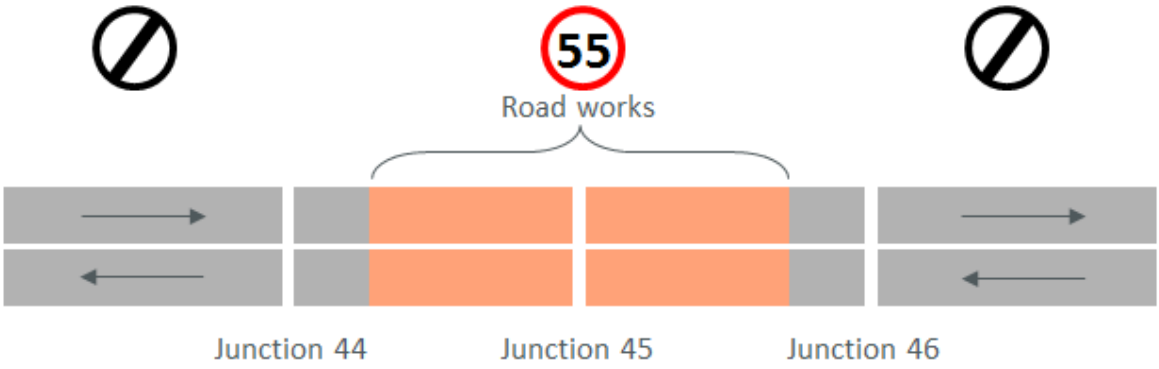
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
a) The roadworks will provide long term benefits to drivers	☐	☐	☐	☐	☐
b) The roadworks will provide long-term benefits to me personally	☐	☐	☐	☐	☐

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
c) The long term benefits of the roadworks outweigh the shorter term inconvenience	☐	☐	☐	☐	☐

9. Typically, the speed limit through long-term roadworks on motorways is 50mph. Do you think the speed limit is:

Much too slow	A little bit too slow	About right	A little bit too fast	Much too fast
☐	☐	☐	☐	☐

On the approach to Junction 45, the speed limit changes to 55mph.



10. Did you notice the speed limit change?

- ☐ Yes, I noticed the change in speed limit signs immediately
- ☐ Yes, but I only noticed because other drivers were adjusting their speed
- ☐ No, I did not notice the speed limit change

11. What do you think about the use of 55mph speed limits at roadworks on Motorways?

12. Thinking about the conditions when you drove between Junctions 44 and 46, do you think the 55mph speed limit was:

Much too slow	A little bit too slow	About right	A little bit too fast	Much too fast
☐	☐	☐	☐	☐

13. Did the presence or speed of other vehicles affect the speed at which you drove between Junctions 44 and 46?

☐ Yes – I drove more slowly than I would have liked

☐ Yes – I drove faster than I would have liked

☐ No – I was able to drive at the speed that I wanted to drive at

14. Do you think the 55mph speed limit affected the way you drove?

☐ Yes

☐ No

If yes, please explain how you feel the 55mph speed limit affected the way you drove:

15. When you drove between Junctions 44 and 46, were there any times where the behaviour of other drivers made you feel less safe?

	Overtaking	Close following	Speeding	Using a mobile phone or other device	Other (please specify below)
Car drivers	☐	☐	☐	☐	☐
Lorry drivers	☐	☐	☐	☐	☐
Van drivers	☐	☐	☐	☐	☐
Motorcyclists	☐	☐	☐	☐	☐
Bus/coach drivers	☐	☐	☐	☐	☐

Other behaviours/road users that made you feel less safe:

16. Did you notice any speed cameras between Junctions 44 and 46?

- ☐ Yes
- ☐ No
- ☐ Don't know

17. To what extent do you agree with the statement below? "I would like to see 55mph speed limits used at roadworks"

Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
☐	☐	☐	☐	☐

Please give a reason for your answer to the above question:

18. Compared to a 50mph speed limit, how much did the 55mph speed limit affect your overall level of satisfaction with your journey through the M1 roadworks between Junction 44 and 46? Please complete the statement below: "I felt...

...much less satisfied"	...a little less satisfied"	...no more or less satisfied"	...a little more satisfied"	...much more satisfied"
☐	☐	☐	☐	☐

Please give a reason for your answer to the above question:

19. In general, how satisfied or unsatisfied were you with your journey?

Very unsatisfied	Quite unsatisfied	Neither satisfied or unsatisfied	Quite satisfied	Very satisfied
☐	☐	☐	☐	☐

5 **20. In your opinion, what changes should be made to the design or management of roadworks to improve your experience of driving though them?**

This next set of questions is about your preferences for different types of motorway routes. For each question, please imagine you are driving from A to B and there are two possible motorway routes for you to choose. Both routes have roadworks on them but the roadworks have different characteristics.

21. Which route would you choose?

	Route 1	Route 2
Speed limit	70mph	50mph
Roadworks length	10 miles	5 miles
Lane width	Narrow lanes	Standard width lanes
Speed enforcement	Average speed cameras	None

	Route 1	Route 2
Choice	☐	☐

22. Which route would you choose?

	Route 1	Route 2
Speed limit	50mph	60mph
Roadworks length	5 miles	15 miles
Lane width	Narrow lanes	Standard width lanes
Speed enforcement	None	Average speed cameras

	Route 1	Route 2
Choice	☐	☐

6 23. Which route would you choose?

	Route 1	Route 2
Speed limit	60mph	70mph
Roadworks length	15 miles	5 miles
Lane width	Narrow lanes	Standard width lanes
Speed enforcement	None	Average speed cameras

	Route 1	Route 2
Choice	☐	☐

7 24. Which route would you choose?

	Route 1	Route 2
Speed limit	60mph	60mph
Roadworks length	5 miles	15 miles
Lane width	Standard width lanes	Narrow lanes
Speed enforcement	Average speed cameras	None

	Route 1	Route 2
Choice	☐	☐

8 25. Which route would you choose?

	Route 1	Route 2
Speed limit	50mph	70mph
Roadworks length	10 miles	10 miles
Lane width	Standard width lanes	Narrow lanes
Speed enforcement	Average speed cameras	None

	Route 1	Route 2
Choice	☐	☐

9 26. Which route would you choose?

	Route 1	Route 2
Speed limit	70mph	50mph
Roadworks length	15 miles	10 miles
Lane width	Standard width lanes	Narrow lanes
Speed enforcement	None	Average speed cameras

	Route 1	Route 2
Choice	☐	☐

What is your...

27. Gender?

- ☐ Male
- ☐ Female
- ☐ Prefer not to say

28. Age?

- ☐ 17-24
- ☐ 25-29
- ☐ 30-34
- ☐ 35-39
- ☐ 40-44
- ☐ 45-49
- ☐ 50-54
- ☐ 55-59
- ☐ 60-64
- ☐ 65-85
- ☐ 85+
- ☐ Prefer not to say

29. Finally, please provide an email address so we can enter you into the prize draw.

30. If you have any other comments relating to this survey, please write them here:

11. End of survey

Thank you for taking the time to complete this survey.

12. End of survey [shown if answered 'No' to Q1.]

Sorry, we are looking for responses from drivers who have driven between Junctions 44 and 46.

Appendix B Interview guide

Introductions

- This research is being carried out by TRL (the Transport Research Laboratory) on behalf of Highways England.
- The research aims to gather feedback from people who worked or operated in or around the roadworks during the 55mph trial.
- The interview should take around half an hour but will depend on how much you have to say.
- I have [*researchers name*] in the room with me taking notes who may also ask some questions.
- I would also like to record the interview so that I can refer back to it if needed. Are you happy for me to do this?

  Researcher to complete:

  ☐ *Yes* ☐ *No* …….. *(Signature)* ……..*(Initials)*

- There are no 'right' or 'wrong' answers – we are interested in what you think.
- All of your answers will remain anonymous - the data will not be linked to you as an individual.
- Taking part is voluntary and you can withdraw without giving a reason.
- Do you have any questions before we start?

[If participant gave consent to being recorded, start this now and let them know]

Do you consent to take part in this interview?

Researcher to complete:

☐ *Yes* ☐ *No* …….. *(Signature)* ……..*(Initials)*

1. What is your job role?

   Prompt: What type of work were you doing as part of the M1 J45 scheme?

2. How much did you know about the trial before you started to work in/around the trial works zone?

   Prompt: Any communication with HE or other organisations?

3. What were your expectations of working in/around a work zone with an increased speed, before you had any experience or knowledge of what would happen in the trial?

4. What are your opinions of using 55mph now that the trial is complete?

5. Prompt: What is your opinion based on?

As part of this work we conducted a survey with drivers who use this part of the M1. I'd like to spend a few minutes sharing the results from the survey with you and then we can discuss what you think about these results.

Survey results:

- 32 people.
- Mostly commuters (72%).
- 84% said they saw the speed limit signs for the roadworks.
- A small number of people said they only noticed the speed limit change because of other drivers. The rest admitted to not noticing the speed limit signs.
- 59% said that 55mph was about right compared to 50% when asked about 50mph.
- 13% thought 55 was too fast. No-one thought 50mph was too fast.

Opinions on the 55mph limit:

- 55mph eases congestion
- Means less HGV overtaking
- 60mph would be even better
- It's good when there are no or very few road workers

Concerns raised by participants:

- Some people will think that 55mph means they can drive at 60mph
- Some drivers were still doing 50mph
- 55mph difficult to read on the speedometer

In general people were either neutral or were satisfied with 55mph compared with 50mph (88%). 72% would like to see 55mph used more at roadworks.

6. What are your thoughts on these results?

7. Did you notice any changes in driver behaviour when you were involved with the trial?

   Prompt: Do you think these were associated with the speed limit?

   a. How do you think these changes in driver behaviour affected your safety?

8. Were there any incidents or near misses during the trial that were related to the 55mph speed limit? *If yes, please describe.*
9. How were your tasks carried out safely whilst a 55mph speed limit was in place?
10. Did the 55mph speed limit result in changes to the way existing tasks were undertaken that were not foreseen in the GD04 or Safe Systems of Work? *If yes, please describe.*
11. Did the 55mph speed limit result in additional tasks being required that were not foreseen in the GD04 or Safe Systems of Work? *If yes, please describe.*
12. Did you experience any challenges in performing your job role which were related to the 55mph speed limit? *If yes, please describe.*
13. Were there any improvements or benefits during the trial related to the 55mph speed limit? Please consider all aspects of the trial including driver behaviour, workload, maintenance and management, and traffic. *If yes, please describe.*
14. Were there any drawbacks during the trial that were related to the 55mph speed limit? Please consider all aspects of the trial including driver behaviour, workload, maintenance and management, and traffic. *If yes, please describe.*
15. If a 55mph speed limit was rolled out across the network at roadworks where no road workers are present, what steps would need to be taken, if any, to ensure it was safe for everyone?
16. How would you feel about working on a project that was using 55mph speed limits in this way in the future?

We've come to the end of my questions. Do you have anything to add?

Thank you for taking the time to take part in this interview. If you have any questions or things you would like to add you can email me.

Confirm email address and phone number.

Monitoring and evaluation of the 55/60mph pilots

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