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Dear Guy,

### **Getting to the heart of smart – road user experiences of smart motorways**

Since your report was published in September last year, we have been talking with you on the topic of Smart Motorways; specifically sharing our work to enhance customer experience on All Lane Running (ALR) and aligning it to our customer service strategic plan, and our 2018/19 customer service plan.

As discussed at our meeting in January, the Smart Motorways Expert Advisory Group meeting in February and visit to the M3 Smart Motorway in March, we feel that it is an appropriate time for us to formally respond to the report itself.

To frame our response, we have set it out as follows:

- our overarching ambition to enhance the customer experience on smart motorways, aligning it to our customer service strategy;
- our strategic intent relating to the different recommendations of the report;
- specific actions we have taken and continue to deliver for each recommendation.

### **Enhancing the smart motorway customer experience**

Our ambition is to ensure all of our customers feel safe and confident when driving on a smart motorway. We know from three years of evidence on two M25 all lane running schemes<sup>1</sup> that smart motorways deliver on their safety objective to be as safe as a three lane motorway with a hard shoulder.

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<sup>1</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/725608/M25\\_J5-7\\_SMALR\\_Monitoring\\_3\\_Year\\_Report\\_v2.0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/725608/M25_J5-7_SMALR_Monitoring_3_Year_Report_v2.0.pdf)  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/725599/M25\\_J23-27\\_SMALR\\_Monitoring\\_3\\_Year\\_Report\\_v2.0.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/725599/M25_J23-27_SMALR_Monitoring_3_Year_Report_v2.0.pdf)

However, we know there remains a gap between the safety evidence for all lane running and the perception of safety amongst our customers and stakeholders. We want our customers to feel safe and confident when driving on smart motorways by providing an intuitive, yet controlled, environment which helps them get to their destination safely and on time. All this whilst reducing congestion and the impact on local roads and communities.

Our work does not stop with the ALR review, rather it marks a new chapter for us in engaging with our customers in ever more meaningful ways, as well as continuing to deliver enhancements to the design and operation of smart motorways.

Projects being delivered over the next year will look at the strategic future for smart motorways and seek to understand how (and when) they can be enhanced further through the advent of connected and autonomous vehicles. Furthermore, we will also investigate behavioural science techniques and look for innovative interventions to enhance the customer experience of smart motorways in more subtle and nuanced ways. These 'nudges' are used in everyday life to influence consumer decision-making behaviour, and our aim is to explore how we might apply a similar approach to smart motorways to make them more intuitive for our customers.

Our responses to your recommendations are as follows:

### **Recommendation 1**

*'Highways England should seek to further increase road user knowledge and understanding about:*

- *What smart motorways are designed to achieve and how their various features work for the benefit of road users*
- *What, precisely, individual instructions encountered on smart motorways require drivers to do (for example, in respect of the red X)*
- *What to do if you break down on a smart motorway, including one with no hard shoulder.'*

### **Our strategic intent**

In the last 18 months we have made a step change in our communication with customers and stakeholders, and our ambition is to continue to do so. Customer understanding of the benefits and operation of smart motorways is a fundamental component that enables these schemes to work efficiently and safely.

Safety of our customers is at the forefront of how we plan, manage and operate smart motorways. We are clear that we will never compromise safety when delivering smart motorways but understand that many customers have concerns over safety.

### **Actions we have taken**

- Launched a refreshed Red X campaign (Radio, TV and social media) over Easter 2018 in support of the imminent automatic enforcement of Red X violations.

- Consolidated breakdown advice from all major recovery organisations, the highway code, our Traffic Officer Service procedures and our guidance to customers on how to drive on a smart motorway, enabling us to assess the consistency of breakdown advice and clarify our advice to customers and identify areas for improvement.
- Launched a commercial vehicle driver training module on smart motorways, working in close collaboration with the Freight Transport Association.
- Worked with trainers to provide information and advice about smart motorways through the National Driver Offender Retraining Scheme (NDORS)
- Worked with the DVSA to include Smart Motorways in the Theory and hazard perception tests for learner drivers.
- Commission a research study with customers to gain insight into experiences of breaking down on different road types on the SRN, including smart motorways. The outcomes will inform potential improvements to the content and delivery of breakdown advice to customers.

#### Actions we are taking

- Continue our work with key stakeholders (including DVSA, NDORS trainers and Freight Transport Association) to increase driver knowledge and awareness of Smart Motorways, particularly in the event of a breakdown.
- Launch a new smart motorways video for customers to explain the features and benefits of smart motorways. Explore new and innovative approaches for providing dynamic and immediate breakdown advice to customers who have broken down in a live lane – through enhanced roadside infrastructure (signs) and in-car and smart phone technology. Project commencing October 2018.
- Using behavioural insights and techniques to inform a renewed customer campaign for Smart Motorways.

#### Recommendation 2

*‘Highways England should ensure that speed limits are regarded by road users as appropriate to the traffic conditions, in particular guarding against reducing speed unnecessarily and minimising the perception that speed limits are causing congestion rather than reducing it.’*

#### Our strategic intent

Our ambition is twofold; to a) improve the technical accuracy, timeliness and context of our signal setting and b) to build trust with our customers that the decisions we make have their best interests at heart.

We accept that the setting of variable mandatory speed limits on smart motorways can frustrate customers. What is often visible to us and our experienced team of operators is sometimes not apparent to customers. Where possible we use the electronic signing to explain the reason for a reduced speed limit.

We also recognise there is more work to do to communicate the benefits of smart motorways and furthermore build trust with customers that when we set signs and signals, we will always do so with their safety and journey experience at the forefront of our minds.

#### Actions we have taken

- We have advanced calibration tools that are used to optimise the algorithms used to manage the flow of traffic on smart motorways; these are tuned to local traffic conditions on each smart motorway scheme.
- We are currently undertaking a comprehensive review of variable speed limits to identify potential enhancements and innovations to improve the customer experience of smart motorways.
- We identified an issue whereby on occasions the national speed limit was not being displayed at the end of a section of variable speed limits. We have taken prompt corrective action to ensure the national speed limit is displayed on variable message signs, so that customers are clear which speed limit applies.

#### Actions we are taking

- Continue to explore new messages that aid customer understanding and decision making in a dynamic environment. These messages are always tested with customers before deployment.
- Explore how we can display more information in vehicles using technology to visually or audibly present relevant and accurate information to customers, particularly when they are in between variable message signs. Project commencing October 2018.

### **Recommendation 3**

*'Highways England should make it clearer to road users when the hard shoulder should and should not be used, with consideration given to using a green arrow as well as a red X.'*

#### Our strategic intent

Our ambition is to convert dynamic hard shoulder schemes to all lane running means we already have a preferred approach to eradicate any confusion highlighted. We are continually striving to make smart motorways as intuitive and consistent an experience for our customers, making driving on them as safe and smooth as possible.

Green arrows are used on tidal flow sections and in tunnels across our network. On smart motorways however, we believe that displaying speed limits over lanes on gantries and via variable message signs offers greater clarity to road users as to which lanes should and should not be used and at what maximum speed limit.

Green arrows were considered in the development of the Active Traffic Management pilot on M42 but were discounted, due to there being a potentially less effective fail-safe arrangement.

Installing green arrows would introduce yet another feature on a smart motorway, which would need to be communicated to drivers and has several legal and technical challenges, which we would be happy to discuss with you.

#### Actions we are taking

- Continue to engage with customers around ways we can improve the smart motorway driving experience.
- Pursue our ambition to convert the dynamic hard shoulder schemes to all lane running, starting in the next roads investment period (subject to RIS2 funding).

#### **Recommendation 4**

*‘Highways England should reassure road users that all-lane running motorways are safe, even if you break down, and that any risks associated with not having a hard shoulder will continue to be mitigated.’*

#### Our strategic intent

We aim to minimise anxiety and road user concern over all lane running by offering a controlled environment that is intuitive to use. Our key priority is to provide smart motorways that are safe and where customers using them feel safe and able to make considered and informed driving decisions.

#### Actions we have taken

- Stopped vehicle detection is now installed and operational on the M25 J23-27 and J5-6 all lane running schemes – this system automatically detects vehicles stopped in live lanes and emergency areas and alerts an RCC operator to set appropriate signs and signals to protect the stranded vehicle and warn oncoming drivers of a potential hazard.
- Enhanced visibility of emergency areas through new and improved signs and high visibility orange surfacing. We worked with over 1100 customers to test and endorse these improvements – a model we intend to follow with future enhancements.

#### Actions we are taking

- Continue to roll out stopped vehicle detection systems across the operational smart motorway network.
- Introduce automated Red X enforcement in early 2019.
- Retrofit high visibility orange surfacing and improved signs to existing emergency areas by the end of the RIS1 period (2019/20).
- Ensure all new smart motorways have the emergency area visibility enhancements installed prior to opening to traffic.
- All smart motorways that open from 2020 onwards will include emergency areas at a maximum of one-mile intervals compared to the current 1 ½ miles. Standards / technical requirements documentation change completed.

## **Recommendation 5**

*‘Subject to results of the pilots, Highways England should roll out the orange surface and new signage to emergency refuge areas as quickly as possible, so as to increase road users’ awareness of them and their purpose.’*

### Our strategic intent

The enhancements to the visibility of emergency areas are part of a broader plan to raise awareness of emergency areas amongst our customers.

### Actions we have taken

- Undertaken trials of the visibility enhancements on M3, M1, M25 and M5 with nearly 50 emergency areas now upgraded.
- Engaged with customers at every step in the development process for these enhancements, through in-depth research, focus groups, virtual and real life journeys to gain insight and feedback on the best and most intuitive solution. In total we have worked with over 1100 customers to develop these enhancements.
- The results of the trials were conclusive; the visibility enhancements improve customer awareness of emergency areas.

### Actions we are taking

- We have committed to installing the visibility enhancements on the existing operational smart motorway network, including dynamic hard shoulder running schemes, by 2020. The delivery plan is being developed and will begin this year.
- In support of this we have obtained national, permanent authorisation for the new signs from the Department for Transport.
- All new smart motorways that open from 2018 will include the visibility enhancements as standard.
- We are creating specific customer information campaigns to increase knowledge of what to do if you breakdown on a Smart Motorway including awareness of emergency areas, supported by insight gained from further specific customer research and focus groups.

## Summary

Every day we work to keep our customers safe, keep the country moving, and deliver the best customer service we can. I hope this letter explains how the recommendations in your report have influenced our thinking, and how we are responding both to your input and proactively engaging with customers to enhance smart motorways.

We believe that the enhancements to All Lane Running and actions set out in our 2018/19 customer plan focus on the most important and immediate issues to enable us to improve the customer experience of smart motorways, and we are committed to delivering them. We have really valued your input, both through your research and through direct discussions as our enhancements and plans have developed.

We look forward to continuing working with you and your colleagues.

Yours sincerely



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Safety, Engineering & Standards