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All-Lane Running report
Prepared for Transport Focus

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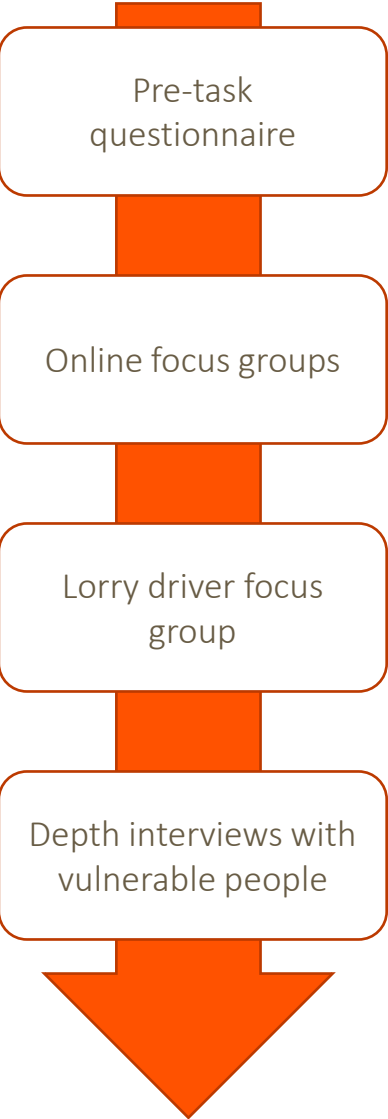


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Methodology and sample



Group discussion programme	
Location	Usage of ALR
Sheffield	Greater Usage
	Less Usage
Leeds	Greater Usage
	Less Usage
London	Greater Usage
	Less Usage
Birmingham	Greater Usage
	Less Usage
Lorry driver group – London	N/A

Five in-depth interviews were conducted with vulnerable road users

Fieldwork was conducted during March and April 2020

Summary of key findings

The motorway is experienced, not evaluated in the abstract

- Drivers are most immediately concerned about those aspects of the motorway they experience **day-to-day**: congestion and the behaviour of other road users.
- Safety emerges as a concern only upon deliberation. **Most drivers feel safe on the motorway, most of the time.**

Smart motorways do not strike drivers as a truly smart system

- While drivers' understanding of the individual features of smart motorways has increased, few get a sense of any **rhyme or reason** behind the overarching system in place.
- **This lack of an overarching rationale or narrative undermines trust.** Road users see smart motorways as a disaggregated series of features that do not work together in a meaningful, helpful, or safer way.

Only a joined-up, smart system can compensate for the 'loss' of the hard shoulder

- The most obvious features of all-lane running are concerning, and the reassuring features are by no means obvious.
- **Most features of all-lane running are uncontentious**, and some, such as enhanced signage, are actively liked. However, the removal of a permanent hard shoulder feels, unambiguously, like a **loss** that smart motorways can only partially compensate for as currently understood.

Summary of key findings

The most reassuring development to all-lane running would be the creation of new norms around driver behaviour

- Like all forms of road use, all-lane running requires compliance from other drivers. However, there is a widespread assumption that **drivers had become accustomed to the hard shoulder**.
- Many feel that the correct behaviours around all-lane running have not yet become **social norms**. Obeying the Red X needs to be **reinforced** (and *seen* to be reinforced) to the same extent as rules around obeying traffic lights.
- Most conceded that obeying the Red X will become normalised eventually and that drivers will get used to the change. However, **drivers have concerns now**, and need to see visible, strict enforcement.

Drivers are willing to be reassured around all-lane running, and few are outright rejectors of the concept

- Most accept that all-lane running could be a solution to the issues of congestion they identified. They recognise, and often spontaneously argue that **current congestion levels are unsustainable**.
- The most effective communications material for all-lane running offers **practical advice while acknowledging drivers' concerns**, committing to improve the system, and emphasising that there is an overarching, organising force keeping drivers safe.
- Drivers also need to be reassured that there is a **human dimension** to the concept. While technology is impressive, most would be interested to learn more about operational centres where humans observe road users and help keep them safe.

Background

All-lane running is a type of smart motorway



Unlike dynamic hard shoulders and controlled motorways, all-lane running stretches of the SRN are those where there is permanently no hard shoulder

In recent weeks and months, there has been significant push-back against all-lane running

Media outlets, politicians and experts in policing and the built environment have expressed concern about the **safety** of all-lane running, and this has been echoed by road users.

*The Government must act as a matter of urgency and suspend all new smart motorway builds until a review is completed. From the evidence we've seen and the experience from our colleagues it's clear that **smart motorways are inherently dangerous**.*

John Apter, National Chair, Police Federation of England and Wales

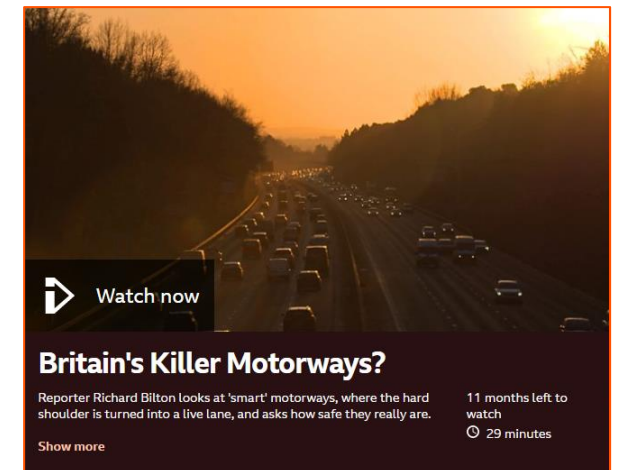
*Congestion on the motorway and major road network in England costs an estimated **£2 billion** every year...cutting congestion creates economic benefits for the region and the country.*

Highways England Statement

Smart motorways could be rendered useless in a decade because they are not suitable for electric cars

- Driverless cars could also have trouble on the hard shoulder, it was claimed
- AA boss Edmund King said they could be 'obsolete' in the next ten years
- Comes after chiefs unveiled plans to turn parts of M4 and M5 into smart roads

Drivers are to blame for smart motorway crash statistics, not new road design – suggests roads chief



Research was needed to untangle the debate around all-lane running in England

Knowledge and Assumptions

- What do motorway users think that 'all lane running' means in practice?
- What is the origin of motorway users' views or preconceptions about all-lane running?
 - News stories? Personal experience? Something else?
- What do motorway users feel about the level of safety on motorways in general, as well as all-lane running sections?
- What is the perceived cost-benefit trade-off to all-lane running? Do they make this trade-off in the first place?
- What do users know about the safety measures already in place?
- How do respondents calculate risk when it comes to driving and what impact does this have on the perceived safety of all-lane running?

People struggle to calculate risk, and often overestimate the likelihood of a catastrophic outcome.

They are also prone to recency bias (allowing recent information to unduly sway their thinking)

Given recent media reports, a major objective of this research was understanding reactions to current media stories and explore the issues in depth

Priorities for Change

- What are the most valuable activities that Highways England could undertake to ensure that all-lane running sections of the motorway are safe for road users?
 - Are these information and infrastructure priorities? If so, what reassurances are needed?
 - Are they infrastructural changes to the SRN? Enforcement of existing rules? Changes in the regulation of traffic? If so, what?

For both: How do views vary across age, socioeconomic status, location, journey purpose and other classification variables?



Usage of and attitudes towards the motorway

When evaluating the motorway, drivers focus on their day-to-day experience

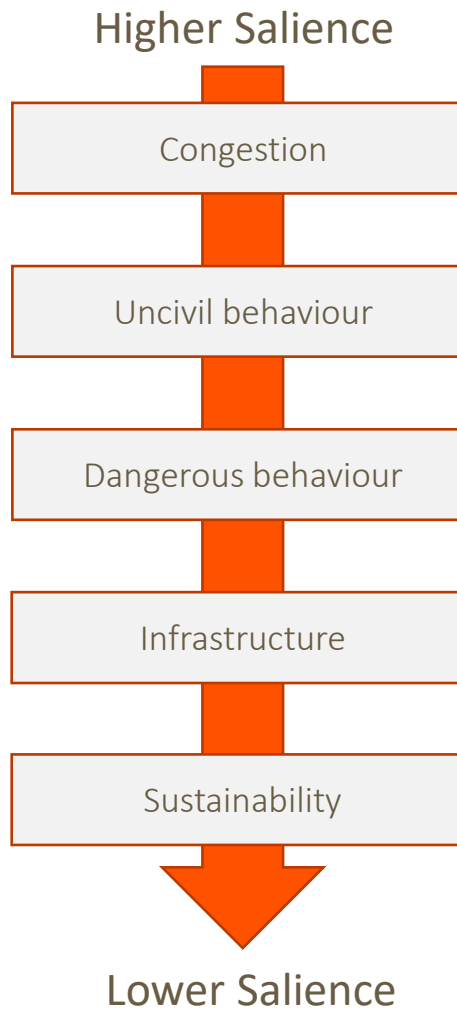
Broader or more abstract concepts are second-tier reflections that only surface on deliberation

We recruited people who drive on the motorway. By definition, none of our respondents are outright avoiding the motorway due to safety concerns

Complaints about other drivers were common. On reflection, the issue is more around inconsiderate driving rather than outright unsafe driving. However, when evaluating safety on the motorway (as well as potential changes to it) many assume that **an inconsiderate driver is a potentially unsafe driver.**

Since there is little recognition of an overarching force in charge of the highways network, the fear is that other drivers' behaviour is not being **policed effectively.**

It's important to note that salience is not the same as importance. Very few (when prompted) would put addressing congestion before addressing safety, but when driving on the motorway day-to-day, this is the hierarchy of salience and relevance.



*I'm not a brilliant driver, I don't think I am, so I prefer to be on the motorway because **I feel safer on the motorway than I do on the [other] roads.***

Birmingham, Frequent

*You can get some idiots who see the speed limit and think they'll try their luck so that's where **you have to be quite alert.***

Birmingham, Infrequent

*You have to be considerate, aggressive and a good driver all at the same time on the motorway. **It's an ego thing;** 'I won't let you in because then you've got one over on me' – there's no love!*

Vulnerable passenger

While safety is seen as important on reflection, most drivers feel safe on the motorway

While the most spontaneous frustrations with the motorway lie with congestion, when prompted, **safety is seen as the primary goal** for Highways England to achieve.

Few (if any) drivers we spoke to **feel unsafe** on the motorway. Respondents were recruited based on actually using all-lane running stretches and so 'outright rejecters' of the system were not included.

That said, safety is an **underlying anxiety**. News reports, horror stories and Highways England publicity of the issue can bring this anxiety to the forefront.

As much as I hate them, average speed cameras have made a positive difference; people are being more careful.

London, Frequent

No I disagree with that, people who know what they're doing just smash on the brakes and once they're out of that stretch they drive on.

London, Frequent

I've been driving so long now that I know what to expect – I've mentally prepared myself that I'm going to see drivers doing stupid things –you kind of know when someone's going to do something erratic.

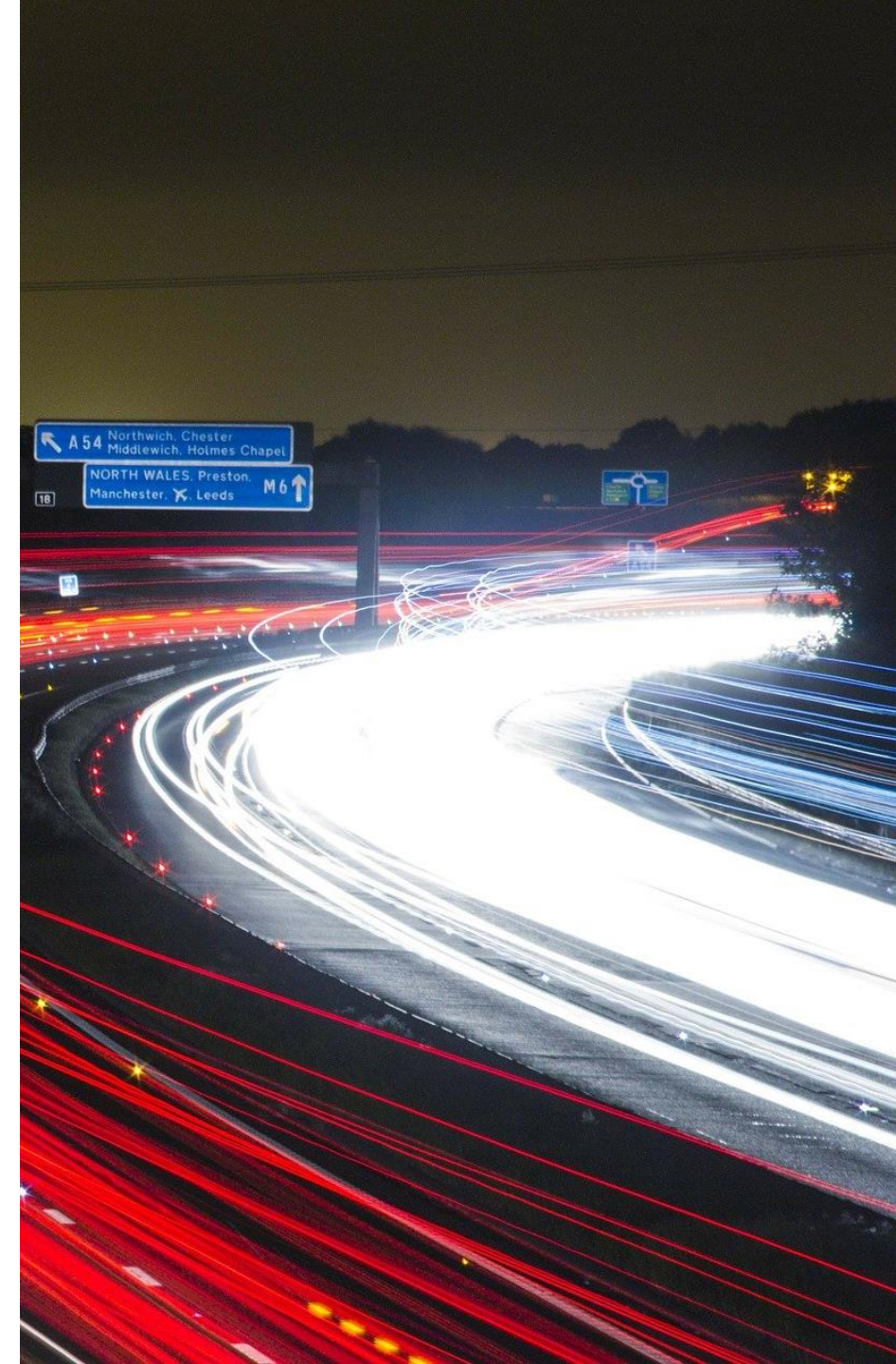
Birmingham, Infrequent

Drivers experience the motorway rather than think about it actively

- There was little awareness of an overseeing force ‘in charge’ of the motorway. As a result, broader issues like the nature of major highway infrastructure or the carbon footprint of the SRN are far from top-of-mind.
- Most had heard of Highways England, but there was little in-depth understanding of what they do.
 - Most know that they are in charge of the highways, but there was very little concrete understanding of quite what this involves.
 - As a result, smart motorways feel like a **series of discrete features** rather than an overarching, smart, system.

*I didn't realise there was road sensors in the road. I just assumed it was all based on CCTV. I **didn't give too much thought to a control room** but obviously that makes sense with a screen up with lots of different motorways but again you are relying on humans.*

Lorry driver, London



Most drivers' experience of the motorway is narrow and local

- Most road users drive at pre-set times of day and usually on just one stretch of motorway. Being asked to comment on the overall 'system' of the strategic road network is therefore something of a challenge.
 - Even those driving more extensively on the motorway do so without much active consideration.
- Drivers know that things have changed on the motorway they use, or that the motorway is becoming a smart one, but they aren't thinking about specific changes or **what it means for them**.
- Features of the motorway are usually viewed as **a series of discrete features rather than a system**. Drivers do not always know whether those changes have been good or bad.
- Drivers recognise that there have been some improvements to the motorway over time, but do not know to what it should be attributed.
- NB - interviews with vulnerable road users showed that their experiences on the motorway did not differ significantly from those of other road users

*Well they're **about the same** as they always are – they're fast, and when you're stuck in traffic they're the worst place to be...*

Vulnerable driver

***Just finish all the roadworks!** I mean how long have they been going on at the M5 – about six months now.*

Birmingham, Infrequent

We go M25 A1, up to Junction 18 and occasionally around the M25 to the M11 near Duxford. I guess in comparison to other people we see more of the motorway and not having to work we get to visit people more freely.

Vulnerable driver

As frequent users, lorry drivers brought a more in-depth perspective to the research

- For these drivers, smart motorways and all-lane running were much more salient.
- Average speed limits created concerns about incurring fines, without always knowing why, exacerbated by the fact that they are more frequent drivers than the rest of our sample.
- As with other drivers, they did not always see the rationale for speed limits changing, and sometimes felt that changes in the speed limit were sudden, leading to sudden braking.
- However, as more professional drivers, they did recognise that most breakdowns are not sudden – there are almost always warning signs and the idea of using ERAs felt more natural and appropriate.

*If you leave a gap between you and the car in front, **someone cuts in front** and you don't have a gap anymore.*

Lorry driver, London

***I still don't trust them.** I still sit in the inside lane even though I can use the hard shoulder I don't want to get hit with a fine. I'm not confident with it. I will just sit there and wait and go as far as I can.*

Lorry driver, London



Vulnerable people's experiences on the motorway did not differ significantly

Some with physical disabilities noted that they would struggle to get over the barrier and onto the grass verge in the event of a breakdown.

One respondent with vision problems noted that the enhanced signage of smart motorways in general made her driving experience a great deal easier.

In general, these respondents feel that they need to plan more to drive on the motorway whether all-lane running or not. This could involve planning meals and medication to ensure they are well for the trip ahead.

One respondent with a chronic bowel illness regularly uses the hard shoulder to rest or recover from a flair-up.

*Well the hard shoulder's gone which is a problem. I have a problem with my back which means **I need to be able to stop** – now I have to drive off the motorway in order to rest. I can't go more than an hour without needing to stop. It's a little bit of a nuisance.*

Vulnerable passenger



Smart motorway context

Respondents' understanding of the basic features of smart motorways has improved

However, knowledge of the underlying, organising system was low

- The **basic features are recognised** and respondents generally knew how to drive on a smart motorway.
- Compared to Illuminas' 2017 research on Smart Motorways, knowledge has **improved** with regards to the individual features of the motorway.
 - Drivers now recognise that smart motorways are intended to manage the flow of traffic, but feel they are a **trade-off**; improving capacity at the expense of the hard shoulder.
- Drivers do sympathise with the idea that **motorway widening is expensive** and are willing to see smart motorways as a pragmatic solution.
 - Some, however, feel that **corners are being cut**.
- Many of these basic features are **uncontentious**. Variable signage is useful, and features like the Red X and average speed limits are not objected to in the main.

They have the signage saying that there's been a smash ten miles ahead of you and it adjusts the speed limit so that there's less of a queue

Leeds, Infrequent

*An indication board might say 'accident ahead' and then you drive 20 miles and there's nothing...Again very often I drive for quite considerable distances, the problem's resolved but the board hasn't been updated. **The speed and accuracy of the information leaves a little to be desired.***

Vulnerable driver

Most features of smart motorways are well-liked, with the exception of all-lane running

Feature

Reaction to that feature

Comments

Red X

Drivers understand that the Red X is a safety feature, and appreciate it as one, but its perceived effectiveness is limited by fears that other drivers are ignoring it, and a perceived lack of enforcement.

They pull out, they don't take any notice. It's the education on how to use them that is lacking.
Leeds, Frequent

Variable information signs

Variable information signs are almost universally seen as an improvement but some are still confused by a perceived **mis-match** between the information on the signs and what they experience on the road.

I think they need more around where the junctions are as that's where most of the congestions is.
Leeds, Frequent

Variable speed limits

Variable speed limits are seen as a reasonable way of managing traffic flow but some (particularly lorry drivers) fear being 'caught out.'

If it says 30 and you're going over 40 unless there is police out, you won't get a ticket.
Lorry Driver, London

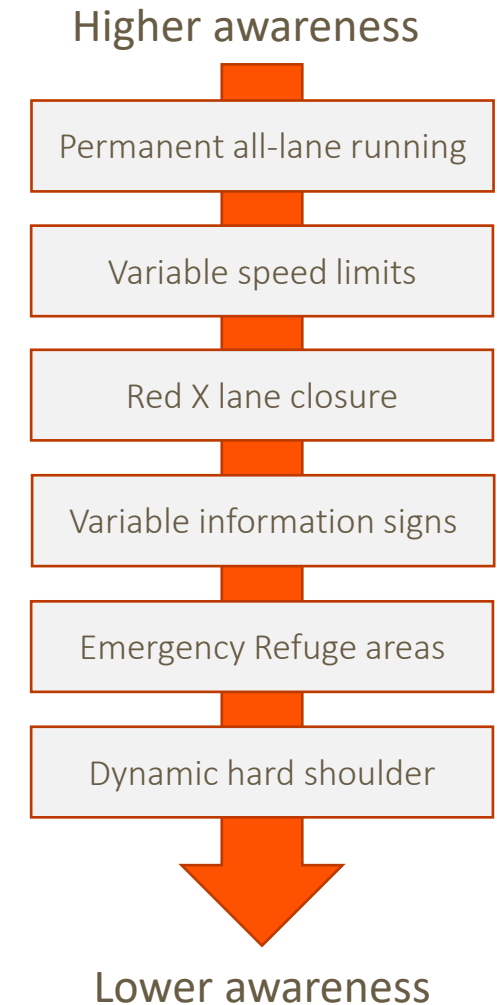
All-Lane Running

All-lane running is the most contentious feature of smart motorways, and very few make a distinction between dynamic hard shoulder and all-lane running.

You always see someone break down and without a hard shoulder they're without a doubt in danger.
Vulnerable passenger

All-lane running is the most confusing aspect of smart motorways

- In 2017, Illuminas conducted a piece of qualitative research on road users' attitudes towards smart motorways which found that **all-lane running was poorly understood**.
- While there has been some improvement in driver understanding, the same core problems remain:
 - There is **almost no recognition of the distinction between a dynamic hard shoulder and all-lane running**, as with the research in 2017.
 - There is a slightly increased understanding of the 'rhyme and reason' behind smart motorways – previously, many felt there was an **inconsistency** between road conditions and the average speed limit.
 - Now, more recognise that the road conditions that caused a change in the average speed limit may well have **changed** before the driver can see them.



However, most respondents felt safe on the motorway, whether all-lane running or not

- Safety is a background concern on the motorway rather than an outright concern.
- The individual features of smart motorways are largely seen as positive.
- However, in and of themselves, they do not compensate for the loss of the hard shoulder for many drivers.
- These features are not seen as working in tandem and as a result, all-lane running is most commonly framed as **‘getting rid of the hard shoulder’** without a meaningful replacement.
- The smart motorway system is not yet understood as ‘smart enough’ to act as a balanced trade-off.

Sundays it's actually quite a pleasure on the motorway; less traffic. On a Saturday you hold your breath and hope there isn't an accident because then a half hour journey ends up being two hours, but I do enjoy it.

London, Frequent

*I'm quite a confident driver but when I go down the slip road and I initially have to join the traffic during rush hour I always have this fear that nobody will let me in and the speed I'm trying to get to I might need to **suddenly ram the brakes on at the last minute.***

Leeds, Infrequent



Initial attitudes towards all-lane running

All-lane running is experienced, rather than talked about or actively considered

- As with all motorway driving, many experience all-lane running ‘on autopilot’, without a great deal of deliberation.
- What is immediately apparent about all-lane running is concerning, and what is reassuring is not immediately apparent.

Why does all-lane running feel unsafe?

Conditioning

Drivers are used to the hard shoulder.

Intuitively, the hard shoulder makes the most sense; they know what to do (and are confident that other drivers know what to do), and any alternative to the hard shoulder **complicates the process** and starts to get worrying.

Lack of awareness of compensating factors

‘Smart’ systems are complicated. The mitigating safety measures are often unknown, or misunderstood, and even when made aware, drivers **instinctively compare them to the ‘gold standard’** of the hard shoulder.

It’s immediately clear why all-lane running *might be less safe*; the counter-argument is much less clear.

Overestimating the likelihood of catastrophe

Drivers over-estimate the likelihood of breaking down between emergency refuge areas. They do not, however, over-estimate the **consequences**. They know that this could be potentially disastrous because of the clear risk of being hit from behind.

It’s safer because you know that it’s a hard shoulder, you don’t have to worry about people thinking oh is this a running lane or is this a hard shoulder?

Birmingham, Frequent

As far as I remember the protocol never changed – traffic is manic so presumably all you can do is stick your hazards on, and pray someone doesn’t smash into you.

Leeds, Infrequent

*I’d agree for the most part, but there’s always that thought in the back of my mind that **if anything did happen...***

Leeds, Frequent

Respondents typically deployed some or all of these assumptions in their initial thinking

- Getting rid of the hard shoulder is inherently unsafe.
- I haven't seen congestion on the motorway improve at all.
- It's fine in principle but other drivers won't follow the rules.
- I don't know what the technology involves, it doesn't reassure me.

Against All Lane Running



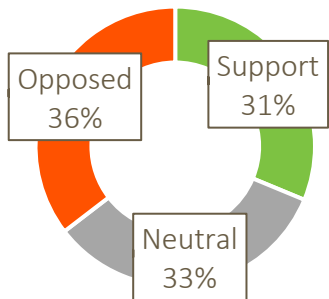
- I didn't know all lane running existed on my stretch of motorway.
- I feel a little uneasy on them but I don't think I'm likely to break down.
- I just haven't heard enough to make a decision.
- I recognise that congestion at the current level is unsustainable but why can't they just widen the motorway?

Neutral towards All Lane Running



- I have noticed congestion improve on ALR stretches of motorway.
- The motorway is full to capacity; something has to be done and this is the best solution available.
- I haven't noticed any problems with it and I haven't heard any 'horror stories.'

Supportive of All Lane Running



Initial starting positions among those recruited to the focus groups

Perception of control is a major determinant of starting attitude towards all-lane running

Against All Lane Running



- The removal of the hard shoulder is a zero-sum game for these drivers; it is seen as an **outright loss** and mitigating benefits (either safety features or improved capacity) are not recognised.
- **Those who object to all-lane running** feel that they have little **control** over events on the motorway, and do not recognise that other drivers are taking control either. (While many drivers feel this way, those who start off opposed to all lane running feel it acutely.)
- It is generally true that people **over-estimate the likelihood of catastrophic events**, and for these respondents, isolated 'horror stories' on the motorway have a real, negative impact.
- These respondents are unlikely to have actually experienced a breakdown on the motorway, all-lane running or otherwise, but feel that they lack control over external factors like other drivers, '**random breakdowns**' or the response of recovery teams.

*I heard on the TV that those cameras aren't under surveillance the whole time; so there's a period of time where vehicles aren't being moved away from the lane you occupy which is a scary thought; **very dangerous**.*

London, Frequent

*It 100% would work if people knew what they **were doing** but every hundred yards there's someone cutting in and out or hogging the lane. The RAC would have a problem getting there too.*

Leeds, Infrequent

More neutral respondents had usually just not heard enough about all-lane running

Neutral towards All Lane Running



- They are comfortable and satisfied with the user experience of all-lane running and it does not feel unnatural.
- Indeed, they may find themselves more frustrated by other aspects of motorway driving such as other drivers' behaviour or congestion.
- However, when asked to deliberate on all-lane running more explicitly, they do recognise some concerns (as well as benefits).
 - They are appreciative of the more pragmatic aspects of all-lane running such as improved journey times and more driver information.
 - When prompted, these more neutral respondents tended to default to the obvious intuition of all-lane running being less safe.

*Maybe it was just my ignorance but I **didn't** know I drove on a motorway without a hard shoulder.*

London, Infrequent

I just focus on the congestion aspect; I didn't even realise [the smart motorway system] was there for safety to be honest.

Birmingham, Frequent

Initial supporters of all-lane running prioritised traffic speed, while others had more realistic impressions of other drivers' abilities to follow the rules

Supportive of All Lane Running



- These drivers **usually felt more in control of their experience on the motorway** – they felt that if they are careful and plan ahead, they will be safe.
 - These drivers trust themselves to take personal responsibility and see it as their job (and the job of other drivers) to use the road appropriately.
- They also tended to have a more realistic understanding of how likely they were to actually **break down** on the hard shoulder
 - **Initial awareness of emergency refuge areas** was a strong determinant: knowing that there is still a 'safety net', even if not quite as extensive as a dedicated hard shoulder, is helpful.
- These respondents often felt that a smooth-running motorway is a safe motorway – they may be aware of highway systems in other countries (e.g. the autobahn) where a high-speed, high-capacity, high-safety approach is used.

I think the slower the speed limits the more dangerous the driving is. I drive a really fast car and I think I'm going to sell it because I can't drive it.

xxx

*Well they're trying to make use of the lane that's already there. I mean I used to think 'look at us faffing around and there's that lane free' – **at least now we are making use of it.***

Birmingham, Infrequent

By far the strongest misconception about all-lane running lies with the extent and nature of Emergency Refuge Areas

The greatest fear lies in the possibility of breaking down in between ERAs.

Logically, drivers accept that similar dangers are inherent in 'traditional' motorways (e.g. breaking down in the fast lane), but the lack of understanding of ERAs prevent them from being seen as a feasible alternative to the hard shoulder.

Drivers have many questions and misconceptions around ERAs and have not yet heard any convincing counter-narrative.

They do not feel that they have been told anything about ERAs, instead **left to discover them on their own**.

As a result, there is a great deal they will only discover about ERAs in the event of a breakdown (which, most argue, is too late).



What happens when you get in?



What happens when you pull out?



How large are they?



How frequent are they?



What if two cars need to pull in?



How will recovery vehicles get in?

*I think the refuge area should be more clearly marked, or more consistent, so you know if you're going to break down at least you know you've got a mile to go – **at the moment I wouldn't know what to do.***

Birmingham, Frequent

*I didn't realise the refuge areas were so **far apart**, like 2.5km is quite a distance. If I was in a lorry I wouldn't mind because it is quite robust but I wouldn't want to be in a car.*

Lorry Driver, London

They're so far apart that by the time you get there you've knackered the tyre.

Vulnerable passenger



Deliberation on All-Lane Running

Drivers are open to both information and reassurance on all-lane running

Tone of voice is critical. Drivers will judge all-lane running on experience, not data

- Driving on the motorway is an individual experience. Drivers do not think about safety statistically and it is crucial that all-lane running *feels* safe.

In evaluating a range of communications, several key principles emerged

Drivers do not want to see rationalisations for all-lane running

- Structured arguments promoting all-lane running can feel defensive, polemical and (at worst) manipulative. Material that acknowledged that some drivers feel unsafe (e.g. RAC and House of Commons Transport Committee) resonated more strongly than those that did not (e.g. Highways England).

Offering practical advice about how to use the motorway was seen as useful

- Reassurance and education is much more effective than simply stressing what to do in the worst-case scenario. This also reassures drivers that their fellow road users are being kept informed and will behave appropriately.

Information about the underlying system reassures drivers that there is an overarching, organising principle

- It is important to **show that there is a 'system'** of all-lane running rather than a disjointed collection of features. Stressing both the physical infrastructure *and* methods of ensuring compliance achieves this.
- It is equally important to show (both in public dialogue and in fact) that the hard shoulder is being **replaced with something meaningful**.

Providing reassurance that the system is constantly being refined and improved

- Keeping drivers informed about **improvements** to smart motorways has both practical and emotional resonance.

Statistics about road safety are difficult to interpret, and emotionally **unhelpful**

- ‘Horror stories’ have real emotional power: a collision on a motorway that used to have a hard shoulder *feels unjust*: ‘This wouldn’t have happened if there was a hard shoulder.’
- Statistics about how all-lane running can be safer than conventional stretches of motorway do little to reassure.
 - In the focus group setting the tendency was to ‘pick apart’ these figures, but more broadly, it has not been shown *how* all-lane running could be safer than a conventional motorway.
 - Statistics about performance improvement (*e.g. 22% improvement in efficiency*) are very hard for drivers to interpret
- The motorway is experienced on an individual level and drivers struggle to make the link between aggregate data and their personal experiences, either in terms of their perception of risk or journey performance.

*I don’t want to hear ‘oh we only had one person die last week’ because **that could have been me.***

Lorry driver, London



Highways England's introduction to Smart Motorways was met with some criticism

This information can come across as polemical. While very few distrusted Highways England, there was a broad assumption that they have a 'vested interest' in promoting the safety of all-lane running.

This lacks emotional resonance and does not demonstrate understanding of why a driver *may feel unsafe*.

While 'pioneering technology' was well liked in general terms, additional explanation is called for.. More information about the rationale and **logic** behind the technology would be reassuring and helpful.

Some pointed out (and agreed with the Commons Transport Committee) that this pilot scheme is unlikely to be **representative** of the rest of the ALR scheme.

Terminology like 'reliability' was often seen as **vague** and in need of more explanation.

That doesn't give me any reassurance – I have my wife and grandchildren in the car 'oh don't worry someone is seeing this on camera and they'll be along in ten minutes?'

Vulnerable driver

Smart motorways

Congestion on the motorway and major road network in England costs an estimated £2 billion every year, with 25 per cent of this resulting from incidents. So cutting congestion creates economic benefits for the region and the country as a whole.

In our [business plan](#) we laid out our plans to make your journeys more reliable. This includes adding more than 4,000 miles of extra capacity through smart motorways.

Smart motorways relieve congestion by making the hard shoulder available for use by traffic. On some smart motorways the hard shoulder is opened at busy times. On others it is permanently converted into a traffic lane (known as all-lane running). Regularly spaced refuge areas are used for emergencies - driving at 60mph you will reach a place you can stop in an emergency every 75 seconds on average.

Smart motorways use pioneering technology to:

- monitor traffic levels
- change the speed limit to smooth traffic flow, reduce frustrating stop-start driving and improve journey times
- activate warning signs to alert you to traffic jams and hazards up ahead
- close lanes – for example to allow emergency vehicles through

Smart motorways mean increased road capacity faster and at less cost than traditional road widening schemes. They remain within current motorway boundaries, minimising the environmental 'footprint' of the scheme. And they're just as safe – often safer.

We already have evidence of the benefits that a smart motorway scheme can bring. The first smart motorway scheme (known then as a 'managed motorway') opened to traffic on the M42 motorway in 2006. Analysis of data gathered since opening has found that:

- journey reliability improved by 22 per cent
- personal injury accidents reduced by more than half
- where accidents did occur, severity was much lower overall with zero fatalities and fewer seriously injured

Learn [how to drive on a smart motorway](#).

Detailed information about existing safety measures were reassuring

As noted, many misconceptions exist around emergency refuge areas and information here is emotionally very reassuring

- Many participants found the **extent and functionality of the technology**, particularly planned investment in stopped vehicle detection, to be impressive and reassuring
- Information about **the extent, frequency and human monitoring of ERAs** is also welcome, and news to many drivers.
- Knowing that ERAs are 100m in length was useful and many were pleased to hear that **recovery vehicles** and other emergency service vehicles could still attend an ERA. This reveals more about the overarching purpose of an ERA – they are a space for active recovery of vehicles rather than a ‘waiting area.’
- The idea of regional control centres and human intervention is largely reassuring. 100% CCTV coverage is surprising and again reassuring as a concept.

However, concerns remain

- Reassurances will be needed that there is a balance between human and technological intervention.
- Statistics around the average spacing of ERAs is not always convincing. Even with the knowledge that they are being monitored, the fear of worst-case scenario collision persists.
 - Some argued that a **nationwide average spacing** has no bearing on the situation on their particular stretch.
 - Others simply felt that **as long as there is a non-zero chance of breaking down in between ERAs, all-lane running is unsafe.**

Information about technology alone does little to reassure drivers

Human intervention is the missing link in communicating all-lane running. The material shown here goes to significant lengths to stress the variety of technology used on smart motorways, but omitting information about active, human intervention leaves many wondering ‘what happens’ to the data that is being captured. Stressing the sheer number of people involved will give all-lane running the sense of an organising principle; a system rather than a passive set of features.

*I have one concern which is that there will be lots of data and it's kind of up to them what they do with that data, how they trace it, make use of it. **Make me safe by knowing how they make use of it.** What measures are they taking? Are they analysing it well or not?*

Lorry Driver

***How quick** can that cross sign possibly be put up there? Even with a radar I can see how people might be helped further down the road but in the moment...*

London, Frequent

*I don't understand the verge mounted radar – if you've got a camera **what more do you need?** You can see with your eyes whether it's busy or not. I guess it must be a back-up?*

Lorry Driver



*I'm not worried about the people who are miles behind me, I'm worried about the people who are **fifteen seconds maximum away from hitting me.***

London, Frequent

The most successful material accepted both the positive and negative aspects of all-lane running

Both the RAC and House of Commons came across as disinterested parties

These respondents wanted to hear that their concerns were being taken into consideration by Highways England.

Both recognised that there were improvements to be made

This reassures drivers that even if the rollout of all-lane running is likely to proceed, the process is not static and improvements will continue. It also indicates that drivers' fears are being listened to.

Finally, both recognised that there are potential, legitimate problems with all-lane running

To some extent, those less supportive of all-lane running were looking for material that supported their viewpoint.

More broadly, however, respondents' felt that the safety concerns around all-lane running are immediately obvious, and any material that fails to acknowledge these potential issues can come across as 'sweeping them under the rug.'

*If they're counting safety over time, well over that time **cars have got safer**; my car has collision breaking attached to it.*

Leeds Infrequent

The decrease in accidents is very reassuring, if what they're saying is right. I suppose they're right that accidents used to happen on the hard shoulder too.

Leeds Infrequent

Seeing evidence that drivers' concerns were being addressed was very reassuring

By far the most encouraging change was the automatic fining of Red X violations

- Severe punishment of Red X violations is seen as the only feasible way to 'guarantee' safety on ALR stretches.
- Drivers want to see **social norms** develop around the Red X – driving on a Red X should be as unthinkable as running a red light or driving on the hard shoulder.
- The Department plan successfully conveys that there is a coherent 'system' around smart motorways.

Increasing the number of ERAs was well-liked, particularly among 'neutral' drivers

- While the most deep-rooted concerns cannot be 'fixed' by increasing the number of ERAs, it does reassure more agnostic drivers that the likelihood of breaking down between ERAs is going to be very low indeed.

Improving the visibility, spacing and consistency of ERAs was seen as essential

- Some drivers hold onto the idea of the left hand lane being 'different' to the others, even in an all-lane running environment. They want to see it differentiated in some way as a 'multi-purpose' lane around which drivers should exercise additional caution.

Drivers accept the importance of knowing what to do in a breakdown but feel deprived of the big picture

Drivers would rather feel reassured that other drivers know to obey the Red X

- Again, many respondents wanted to know that *other* drivers knew what to do – the question of what they personally should do in a breakdown was much less salient.
- For these drivers, this simply wasn't the message they wanted to see. They trusted themselves to stay safe during a breakdown but other people need to be told not to endanger them.

In principle, educating drivers about what to do in a breakdown is accepted

- However, the first priority is to educate drivers more broadly about behaviour on all-lane running stretches – highlighting the 'worst case scenario' can feel worrying and can feel lacking in context.
- They do not reject this information but it can feel narrow, sidestepping the broader educational need around driver behaviour.

*You do **behave differently** when you're in an emergency situation; you need very clear and simple information because 90% of your common sense goes out the window.*

London, Frequent



FRONT SIDE



REAR SIDE

While behaviour change around all-lane running will be essential, drivers differ about which behaviours are ‘reasonable’.

Most come to accept that drivers will (eventually) learn to respect the Red X

- However, doubts remain for the short term. Following the Red X simply does not have the same ‘social norm’ factor as obeying red lights or not driving on the hard shoulder.
 - Many accept that new drivers can be taught about the Red X from the moment of learning how to drive, but ‘for now’, our respondents anticipate many drivers flouting the rules.

However, many doubt whether drivers can be encouraged to maintain their vehicles properly

- Some respondents use the motorway for ‘short hops’ – lower-stakes, short distance journeys for which behaviours like checking tyre pressure feel excessive.
 - As a result, few want to see all-lane running premised on the assumption that better vehicle maintenance would lead to a safe motorway.

On reflection, some do reason that all driving requires the cooperation of other road users

- However, outside of the focus group setting, this more considered attitude is unlikely to be pervasive. Significant reassurances around the monitoring of driver behaviour will be crucial.

This is stuff I learned in Germany 40 years ago in driving school!

London, Frequent

*You have to show them two sides of the coin – the **pros and the cons** – drill the safety aspect into it, make people aware of it, see the signs, billboards and proving it’s safe.*

Lorry driver, London

People don’t check their cars over for short journeys; I’d be very surprised if people did, you’d have to be very anal to do that.

Leeds, Infrequent



Summary and conclusions

Evidence and explanation did help to challenge these starting assumptions and reassure

- Getting rid of the hard shoulder is inherently unsafe.
- I haven't seen congestion on the motorway improve at all.
- It's fine in principle but other drivers won't follow the rules.
- I don't know what the technology involves, it doesn't reassure me.

Against All Lane Running



- I didn't know all lane running existed on my stretch of motorway.
- I feel a little uneasy on them but I don't think I'm likely to break down.
- I just haven't heard enough to make a decision.
- I recognise that congestion at the current level is unsustainable but why can't they just widen the motorway?

Neutral towards All Lane Running



- I have noticed congestion improve on ALR stretches of motorway.
- The motorway is full to capacity; something has to be done and this is the best solution available.
- I haven't noticed any problems with it and I haven't heard any 'horror stories.'

Supportive of All Lane Running



Evidence and explanation did help to challenge these starting assumptions and provide reassurance. After deliberation, there is substantial in-principle support for all-lane running

By the end of the discussion, respondents' perspectives became more nuanced

- I am sceptical of the Highways England statistics and I don't believe they are as safe as they claim.
- I have heard that it could take up to 17 minutes for Highways England to respond to a breakdown.
- The hard shoulder is a safety net – even if it reduces capacity it simply has to stay.
- Fundamentally I do not trust other drivers to act safely. The consequences of other drivers ignoring the rules could be fatal.

Against All Lane Running



- I trust Highways England to make sensible decisions about road management, even if I personally feel unsafe.
- I feel unsafe now, but as drivers become more aware of the rules it will probably get better.
- This just isn't a very important issue for me. I don't use the motorway often and I'll be fine when I do.

Neutral towards All Lane Running



- I feel reassured knowing that I am always being monitored on the road.
- I am impressed by the sheer range of technology being used to promote safety.
- This is the only viable means of increasing capacity on the motorway.
- An efficient motorway is a safe motorway – less stop-and-start driving will make us safer.

Supportive of All Lane Running



Across both behavioural and attitudinal dimensions there was a broad consensus that Highways England need to deliver ongoing communication about improvements to all-lane running, and improve the tone of communications overall

Improve the Communications Communicate the Improvements	
Communications	Practical improvements
Acknowledge the genuinely held concerns of drivers on all-lane running stretches of motorway	Provide more visible and high-profile enforcement of the Red X system
Explain how all-lane running works as a system , rather than a collection of features	Demonstrate constant review into the safety and effectiveness of all-lane running
Give practical advice on overall behaviour on ALR stretches, not just during a breakdown	Continue to focus on improving the frequency of emergency refuge areas
Demonstrate ongoing improvements to the all-lane running system	Enhance and develop the human elements of all-lane running
Take care around statistics. Safety is interpreted personally, not at the population level	
Avoid coming across as polemical; show the mechanism for why all-lane running works .	
Excessive focus on the tech can undermine the idea of all-lane running as a managed system	



Illuminas
Enlighten. Empower.

All-Lane Running report
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