Public Affairs

M4 Junctions 3-12 Smart Motorway scheme

Written Representation to the Planning Inspectorate

ABOUT THE RAC

This submission is made on behalf of RAC Motoring Services (The RAC) which is the UK's oldest motoring organisation. The RAC offers a range of motoring services including roadside assistance, motor insurance, motoring advice and information and is separate from the RAC Foundation which is a transport policy and research organisation which explores the economic, mobility, safety and environmental issues relating to roads and their users.

With more than eight million members, the RAC is one of the UK's most progressive motoring organisations, providing services for both private and business motorists. As such, it is committed to making driving easier, safer, more affordable and more enjoyable for all road users.

The RAC, which employs more than 1,500 patrols, providing roadside assistance across the entire UK road network and as a result has significant insight into how the country's road networks are managed and maintained.

More information on the RAC is available at www.rac.co.uk

DESIGN OF SMART MOTORWAYS

Configuration Options

The RAC is supportive of the current use and expansion of Smart Motorways across the Strategic Road Network (SRN) as part of the Government's Road Investment Strategy.

RAC believes that smart motorways will both help alleviate congestion and assist in controlling the flow of traffic, making journeys for road users more reliable and expanding capacity to some of the most congested stretches of motorway. They offer a cost effect solution that minimises environmental impact and have the potential to improve the safety of users of the motorways concerned

We are supportive of the use of the Dynamic Hard Shoulder configuration, which opens up the hard shoulder to traffic during busy times and is currently in use in sections of the M42, M6, and M1, and has a proven record of improved road user safety. However, we are concerned that All Lanes Running configuration in which the hard shoulder is permanently turned into a running lane and where Emergency Refuge Areas are spaced at up to 2.5kms apart will not deliver the road safety benefits of the Dynamic Hard shoulder configuration. Characteristics of the two configurations are summarised below

Dynamic Hard Shoulder configuration	All Lanes Running Configuration
 *[IMAGE SOURCE: HIGHWAYS ENGLAND]*	 *[IMAGE SOURCE: HIGHWAYS ENGLAND]*
The hard shoulder is opened up as a regular running lane when the volume of traffic requires this (when there is congestion). This is in use on the M1, M6 and M42.	The hard shoulder is permanently converted to a regular running lane, and road markings that characterise the hard shoulder are removed. This is in use on sections of the North East and South East quadrants of the M25.

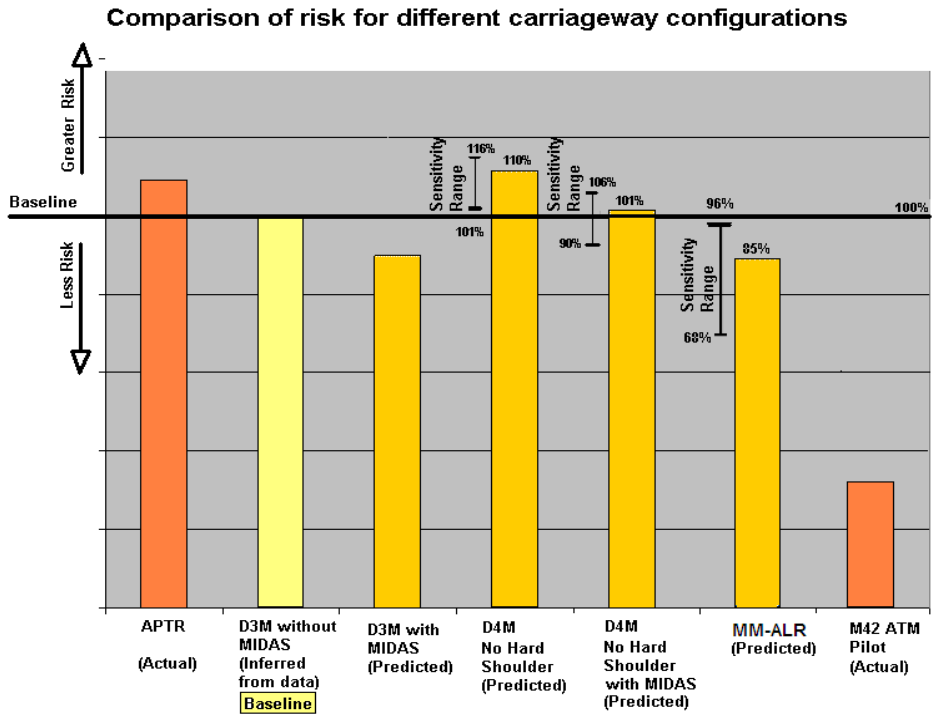
Both configurations of Smart Motorways:

- Have variable speed limits
- Have emergency refuge areas
- Are actively monitored using saturation CCTV by Highways England

Risk Assessments

Highways England have published their own assessment of the relative safety of the two design configurations.

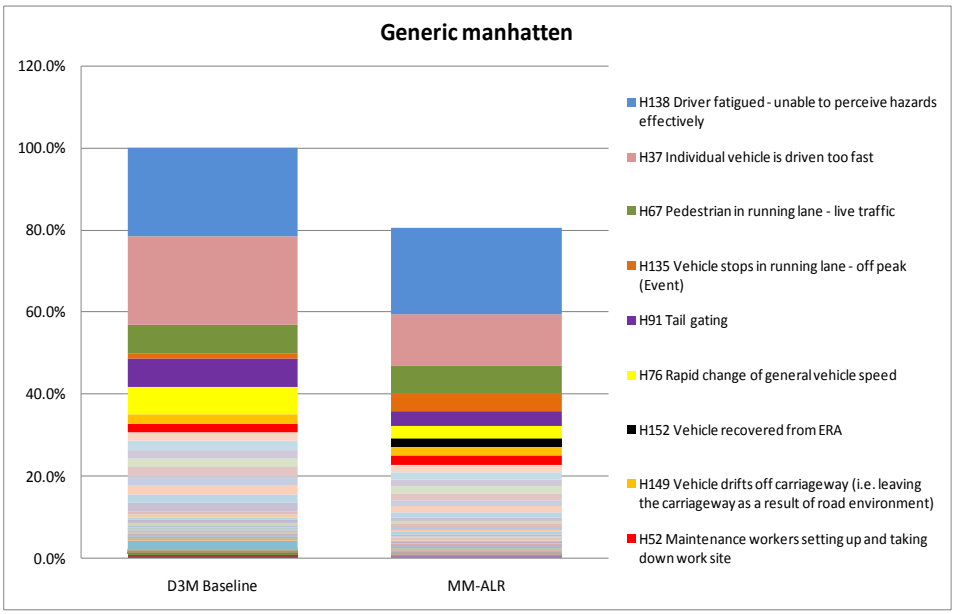
- The first illustration below shows the relative risk associated with various motorway configurations.
- The second illustrations shows a breakdown of the risk components for an All Lanes running configuration and a conventional motorway with 3 running lanes and a permanent hard shoulder. This demonstrates that motorway users are at greater risk when a vehicle breaks down or stops in a running lane for any other reason compared to a concvventional motorway.



3M withiout MIDAS is th risk associated with a conventional 3 lane motorway with a hard shoulder

M42 ATM Pilot is the actual risk of the first section of Smart Motorway with the Dynamic Hard Shoulder configuration on the M42

MM-ALR is the predicted risk associated with the All Lanes Running configuration



Highways England preferred configuration for future Smart Motorways

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Highways England have indicated that their choice of the All Lanes Running configuration is based on 3 main considerations:

- The All Lanes Running configuration is less expensive to operate because there is no requirement to open or close the hard shoulder to traffic when traffic volumes increase or fall.
- The All Lanes Running configuration is slightly cheaper to construct
- A Smart Motorway with the All Lanes Running configuration is no less safe than a conventional 3 lane motorway with a hard shoulder.

The RAC does not dispute the above. However, RAC Patrols indicate that when Highways England closes a running lane by displaying red X signs above the running lane when a vehicle breaks down or stops for another reason, compliance is poor compared with when Highways England closes the hard shoulder to traffic on a Dynamic Hard Shoulder Smart motorway.

A survey of RAC members who have broken down on Dynamic Hard Shoulder and All Lanes Running Smart Motorways also confirms that those breaking down on the All Lanes Running configuration felt more threatened than those who broke down on the Dynamic Hard Shoulder configuration

Eighty-four per cent of drivers surveyed by the RAC felt that the hard shoulder was important in breakdown and accident situations and 82% said they would feel 'very concerned' if they broke down in lane one – formerly the hard shoulder – of a four-lane/all-lane running section of motorway.

Emergency Refuge Areas

Emergency Refuge Areas (ERAs) provide a safe haven in which a vehicle can stop in an emergency to avoid having to stop in a running lane. They are a feature of both the dynamic hard shoulder and All Lanes Running configuirations. Early implementations of the Dynamic Hard Shoulder configurations had ERAs spaced at 500-800 metre intervals so that a motorists braking down normally had an ERA in line of sight. More recent designs have extended the distance between ERAs.

Highways England has indicated that Emergency Refuge Areas (ERAs) will be spaced no more than 2.5kms apart on future Smart Motorways, which RAC believes is too big because someone breaking down or needing to stop in an emergency is unlikely to have an ERA in line of sight so is more likely to stop in a running lane. . Evidence suggests that on some sections of the M25 where the 'all lanes running' configuration is in use, distances between ERAs are, in places, greater than 2.5kms apart.

Scheme	M25 J23-27	M25 J23-27	M25 J5-7	M25 J5-7
Direction	Clockwise	Anticlockwise	Clockwise	Anticlockwise
Refuge area spacings (m)	2,365 2,400 2,435 2,380 2,645 2,445 2,280 1,490	590 2,385 2,315 2,420 1,770 1,500 1,845 2,360 2,500 590	1,990 2,560 2,067 1,925 1,000 2,450 2,285	1,275 2,475 1,530 1,515 2,265 2,570 1,740
Total scheme length (m)	18,440	18,275	14,277	13,370

Maximum spacing (m)	2,645	2,500	2,560	2,570
Minimum spacing (m)	1,490	590	1,000	1,275
Average spacing (m)	2,305	1,828	2,040	1,910

There are three refuge areas which slightly exceed the 2,500m spacing. According to Highways England "these were positioned in order to maximise their visibility to drivers and to avoid locations where significant lane-changing takes place, such as close to junctions. In each case, the solution was approved by the relevant Project Safety Control Review Group."

M4 PROPISAL

The RAC is not opposing the conversion of converting this section of the M4 into a Smart Motorway. We recognise that this is a heavily congested section of the motorway and as such there is a strong case for increasing capacity to reduce congestion and improve safety.

The section of the M4 that is the subject of this enquiry will be configured to All Lanes Running, and we believe that on safety grounds, Highways England should reconsider this aspect of the proposal. Highways England officials have indicated that to date the sections of All Lanes Running Smart motorway have proven to have a better safety record than predicted. However, Highways England has not released evidence to support this assertion.

We would therefore urge the enquiry to require Highways England to reconsider implementation of the Dynamic Hard Shoulder configuration on this and other proposed sections of Smart Motorway because of its proven record of safety and because the All Lanes Running configuration there is insufficient operating experience of All Lanes Running to confidently affirm that the risk assessment have over-estimated the risk to users.

Please address any comments or further contact to:

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