EXPLANATORY MEMORANDUM TO

THE M1 MOTORWAY (JUNCTIONS 28 TO 35a) (VARIABLE SPEED LIMITS) REGULATIONS 2015

2015 No. 1701

1. This explanatory memorandum has been prepared by the Department for Transport and is laid before Parliament by Command of Her Majesty.

2. Purpose of the instrument

2.1 These Regulations enable the operation of variable speed limits on the M1 motorway between junctions 28 and 35a.

3. Matters of special interest to the Joint Committee on Statutory Instruments

3.1 None.

4. Legislative Context

4.1 These Regulations have been made under section 17(2) and (3) of the Road Traffic Regulation Act 1984, which empowers the Secretary of State to make regulations with respect to the use of special roads generally and, as in this case, with respect to particular lengths of motorway. These Regulations allow for the operation and enforcement of variable mandatory speed limits in relation to the specified roads set out in the Schedule to the Regulations.

4.2 Section 134(2) of the Road Traffic Regulation Act 1984 requires the Secretary of State to consult with representative organisations as he sees fit prior to making regulations under that Act.

4.3 The Motorways Traffic (England and Wales) Regulations 1982 (S.I. 1982/1163) have been amended to provide for the use of emergency refuge areas (S.I. 2015/392).

4.4 The Traffic Signs Regulations and General Directions 2002 (S.I. 2002/3113) as amended, enable certain traffic signs to be used to convey information applying to the use of variable mandatory speed limits on motorways.

4.5 In addition, traffic signs authorised by the Secretary of State under section 64 of the Road Traffic Regulation Act 1984 will be placed on or near the specified roads set out in the Schedule to the Regulations to indicate to drivers that vehicles are entering, have entered or are exiting a road covered by the Regulations.

5. Territorial Extent and Application

5.1 These Regulations apply to England. Only those sections of motorway specified in the Schedule to these Regulations will be affected, all of which are in England.

6. European Convention on Human Rights

6.1 As the instrument is subject to the negative resolution procedure and does not amend primary legislation, no statement is required.

7. Policy background

- ***What is being done and why***

7.1 The M1 junctions 28 to 31 and M1 junctions 32 to 35a smart motorway schemes were included in the review of motorway links identified in the "Advanced Motorway Signalling and Traffic Management Feasibility Study" (2008) as a potential priority for smart motorways. These schemes were included in the programme of major strategic road schemes announced in October 2010. The M1 junctions 31 to 32 variable mandatory speed limits scheme was included in the pinch point programme, which forms part of the Government's growth initiative, outlined during the Chancellor's Autumn Statements in 2011 and 2012. Although consulted on as three separate schemes they will, when implemented, form a continuous section of smart motorway and accordingly are being covered in a single statutory instrument.

7.2 Smart motorways use the latest technology to improve journeys by sensing traffic flow and setting speed limits accordingly to keep traffic moving smoothly, instead of continually stopping and starting. The smart motorway proposals on the M1 between junctions 28 to 31 and 32 to 35a involve converting the hard shoulder permanently to a traffic lane to create much needed extra capacity to support economic growth. Information about road conditions and speed limits will be given to drivers on electronic road signs. Variable speed limits will also be introduced on the M1 between junctions 31 and 32 to ensure consistency and congestion management on this corridor. The smart motorway schemes will enable proactive management of the motorway network through the Derbyshire, Nottinghamshire and South Yorkshire areas. The speed limits displayed on the motorway will take account of prevailing traffic conditions with the aim of ensuring the smooth flow of traffic.

7.3 Highways England is committed to building upon the success of the M42 junctions 3A to 7 where hard shoulder running and variable mandatory speed limits have been in operation since September 2006. It is expected that the smart motorway schemes will:

- increase motorway capacity and reduce congestion;
- smooth traffic flows;
- provide more reliable journey times; and
- increase and improve the quality of information for the driver.

8. Consultation outcome

8.1 Consultations relevant to the proposal to introduce variable mandatory speed limits on these sections of the M1 were held as follows:

- M1 junctions 32 to 35a smart motorway scheme: 17 December 2012 to 11 February 2013
- M1 junctions 28 to 31 smart motorway scheme: 6 March 2013 to 10 April 2013
- M1 junctions 31 to 32 variable speed limits: 28 October 2013 to 9 December 2013

The consultation has been published at https://www.gov.uk/government/consultations/m1-junctions-32-to-35a-managed-motorway-scheme. The development of the smart motorway schemes included a detailed assessment of environmental effects, including any impact the schemes may have on local and regional air quality. These assessments indicated that for operation at the national speed limit, the much needed extra capacity and the increased traffic flows that these schemes provide will also have adverse impacts on local air quality at Air Quality Management Areas (AQMAs) and sensitive receptors. A fourth consultation was therefore held from 6 January 2014 to 3 March 2014 on a proposal to implement a maximum mandatory speed limit of 60mph on the M1 between junctions 28 and 35a which would have applied between 07:00 and 19:00 seven days a week. The Secretary of State has not accepted this approach as the Government's preferred option for managing local air quality on the M1 and tasked Highways

England to identify other measures which achieved the necessary reduction. Speed restriction is to be used only to the extent that is absolutely necessary.

These consultations all involved sending a consultation document to a wide range of stakeholders including representative organisations at both national and local levels and including local councils, emergency services (police, fire and rescue and ambulance services), the recovery industry and road user groups. In addition, the consultation documents were placed on the Highways England or the Gov.uk web sites and contain a list of all consultees. The documents were sent to the following number of consultees:

- M1 junctions 32 to 35a smart motorway scheme consultation – 76 consultees
- M1 junctions 28 to 31 smart motorway scheme consultation – 93 consultees
- M1 junctions 31 to 32 variable speed limits consultation – 29 consultees
- M1 junctions 28 to 35a maximum mandatory speed limit consultation – 101 consultees (including all those consulted on the previous consultations).

8.2 Responses to the smart motorway and variable speed limit consultations were as follows.

For the M1 junctions 32 to 35a smart motorway scheme consultation, 15 responses were received from representative organisations (of which 12 provided detailed comments) with a further 12 responses from individual members of the public. The organisations that responded in detail were: Barnsley and Rotherham Chamber of Commerce, the Chartered Institution of Highways and Transportation, National Express Group PLC, the Road Haulage Association, Rotherham Metropolitan Borough Council, Sheffield International Venues, South Yorkshire Police and Crime Commissioner, South Yorkshire Safer Roads Partnership, South Yorkshire Fire and Rescue, South Yorkshire Public Health Network and the Police Superintendents' Association.

On the M1 junctions 28 to 31 smart motorway scheme consultation, 16 responses were received from representative organisations (of which 11 provided comments) with a further 2 responses from individual members of the public. Those organisations responding in detail were: the Automobile Association (AA), Chesterfield Borough Council, Derbyshire Police, Disabled Motoring UK, English Heritage, Environment Agency, National Trust, Rotherham Metropolitan Borough Council, Sheffield Chamber of Commerce, South Yorkshire Safer Roads Partnership, South Yorkshire Public Health Network / NHS Sheffield.

On the M1 junctions 31 to 32 variable speed limits consultation, 6 responses were received, all from representative organisations, of which 2 (South Yorkshire Fire & Rescue Service and South Yorkshire Safer Roads Partnership) provided comments.

8.3 Organisations including ADEPT (Association of Directors of Environment, Economy, Planning & Transport), Barnsley and Rotherham Chamber of Commerce, the Police Superintendents' Association of England and Wales, Sheffield International Venues, the Road Haulage Association, Rotherham Metropolitan Borough Council, National Express Group PLC and the Chartered Institution of Highways and Transportation wrote in support of the principle of reducing congestion by providing additional capacity through implementing smart motorways, although most also noted that this should not be at the expense of safety. The response from National Express stated:

- "The M1 between J32 and J35a is a key section of motorway for National Express coach services and our experience is that vehicles using it are often subject to delays, especially where the motorway is reduced to 2 lanes. We are supportive of measures which look to increase capacity to 3+ lanes, improve journey time reliability and maintain the safest possible road conditions. Judging by the apparent success of similar schemes elsewhere on the motorway network, we see no reason why travelling conditions would not improve through this particular scheme."

Rotherham Metropolitan Borough Council responded in detail, including a number of safety and environmental concerns, but also noted:

- "This section of the M1 is one of the worst congested and improving the capacity on the M1 between J32 and J35a is welcome in terms of both its benefit to improved traffic flow and journey times, and its associated impact on the economy. However, we do not feel that this should be at the expense of road safety or worsening air environmental conditions and support the SY Safer Roads Partnership's position in trying to ensure that the risks associated with the MM-ALR [smart motorways – all lane running] standard are mitigated against wherever possible."

The South Yorkshire Safer Roads Partnership provided a wide ranging response covering their concerns with the smart motorways – all lane running design. Notwithstanding those concerns (which are considered below) their response noted with regard to the principle of variable mandatory speed limits:

- "The principle of variable message signing for speed management purposes is supported but we feel this should be by utilising signs on the well-understood and widely-established gantry system rather than by verge mounted signs."

8.4 Detailed responses raising a number of concerns were received from a range of stakeholders. Responses from the emergency services (including South Yorkshire Safer Roads Partnership on behalf of the emergency services and local authorities in South Yorkshire, South Yorkshire Fire and Rescue Service, Public Health Sheffield and Derbyshire Police) and the AA focussed on the Highways England smart motorway – all lane running design standard. Particular concerns included the following:

Design issues

1) The increased risk of incidents occurring in live lanes with the conversion of the hard shoulder to a running lane, with a particular focus on the increased risk off peak when traffic levels will be lower, traffic speeds may be higher and automatic detection systems less likely to detect a stopped vehicle.

The Highways England response noted that the smart motorways programme and these specific projects have undertaken a great deal of risk analysis. The implementation of smart motorways – hard shoulder running set a precedent for introducing new hazards (for example hazards associated with opening and closing the hard shoulder to traffic) and increasing the risk to some existing hazards (for example stopping in a live lane), while reducing the overall level of risk through the ability to control speeds and encourage compliant driver behaviour. Some hazards will increase in risk, such as 'Vehicle Stops in Running Lane – Off peak' and 'Vehicle Stops in Running Lane – peak'. However it is expected that the overall safety performance of the scheme will be no worse, and that the safety objective of the scheme will be achieved. This is because of the reduction in risk provided by a smart motorways scheme to a significant number of existing motorway hazards. It is important to note that permanently changing the hard shoulder to a running lane will effectively eliminate drivers stopping for illegal (non-emergency), or non essential vehicle fault stops (which can reach a safer location).

2) The speed of response by emergency vehicles at times of congestion when there is no longer a hard shoulder for access.

The Highways England reply noted that it is the experience of other smart motorways schemes that both the number, and crucially the severity, of collisions tend to decrease within the controlled environment that a smart motorway creates. In many instances, then, traffic is able to pass the scene of an incident both because the incident itself is less severe and the additional carriageway capacity provides more opportunity for other vehicles to pass the scene. Complete carriageway blockages as a consequence of an initial incident are rare, although Highways England recognises the need to plan for such eventualities. With the provision of motorway incident detection and automatic signalling (MIDAS) and comprehensive CCTV it will be possible to detect incidents quickly, in particular major incidents, and rapidly start the process of directing resources and managing the incident. The procedures necessary to facilitate access

through traffic are an important consideration. Although there are existing procedures for such scenarios, Highways England continues to work nationally and locally with the emergency services to ensure that the control centres can provide the most appropriate support to the emergency services for access to incidents.

3) The use of cantilever as well as gantry mounted signs, with a strong preference for gantry mounted over lane signals to be used.

The Highways England response noted that although the level of technology on a smart motorway – all lane running scheme is lower than on smart motorways – hard shoulder running schemes such as the M42, it is significantly higher than on a standard motorway, and the introduction of variable mandatory speed limits plays a key role in managing traffic. There is always a balance to be struck between providing sufficient information and avoiding information overload for drivers. The simulator trials undertaken on the smart motorways – all lane running [MM-ALR] concept resulted in the following conclusions:

"In summary the work conducted to examine behavioural issues related to MM-ALR has identified minor areas of concern with regard to participants perception of how MM-ALR schemes operate and what behaviours they are expected to adopt, but has not identified any compelling evidence to suggest that an MM-ALR scheme of the design tested in the simulator does not provide sufficient information to understand and exhibit the required driving behaviour to a level comparable to existing managed motorways schemes."

4) The size and spacing of Emergency Refuge Areas.

The Highways England response noted that vehicles enter and exit Emergency Refuge Areas on existing smart motorway schemes without problems during hard shoulder running operation and the operation on a smart motorways – all lane running scheme is not expected to be any different. Whilst nominally vehicles in lane 1 could be travelling at 70mph when no signals are in operation, in reality the vehicles in lane 1 are more likely to be travelling at nearer 60mph due to the majority use by heavy goods vehicles. The dimensions of the Emergency Refuge Areas are the same as for type B lay-bys on A-roads (however with the entry and exit taper dimensions reversed to give a longer length for exiting (45m)), which gives drivers more room to accelerate before entering the mainline. Additional signing in the Emergency Refuge Area encourages drivers to contact the Regional Control Centre before leaving and the Regional Control Centre will offer safety advice and ask if the driver requires assistance. Although it is expected that the majority of drivers will not need assistance, options range from setting warning legends on the variable message signs, through reducing carriageway speed limits, to setting up a rolling road block if appropriate to allow a slow moving vehicle to leave. This procedure is tried and tested and currently used on the Highways England network.

5) A preference for a dynamic hard shoulder running scheme similar to that in operation on the M42 rather than a smart motorway – all lane running design.

The Highways England response noted that the design for smart motorways has been evolving since the M42 pilot was implemented and as experience and evidence of the operation of the hard shoulder as a running lane has been gained. The current proposals make the most efficient use of the existing road space in providing additional capacity, whilst not reducing safety for the road user. Operating a dynamic hard shoulder is resource intensive and can add different risks to road users and road workers, by introducing an element of uncertainty as to whether the hard shoulder is open or not. Across the strategic road network, drivers can assume that lanes are available for use, unless they are specifically told that they are not; dynamic hard shoulder schemes are the only example where a driver is told when a lane (the hard shoulder) can be used. The proposed approach for the removal of the hard shoulder is a more intuitive and more efficient use of the existing infrastructure that will reduce congestion and help support growth.

Environmental concerns

The response from Rotherham Metropolitan Borough Council also covered environmental issues, and local air quality concerns in particular, between junctions 32 and 35a, while responses from English Heritage, the National Trust and the Environment Agency concerned the possible impact of the M1 junctions 28 to 31 scheme on the environment and on the landscape setting of a number of important heritage sites. Extensive liaison has taken place with these bodies and these aspects are covered in detail in the Environmental Assessment Reports rather than the consultation on variable mandatory speed limits. The response from Thundercliffe Grange Housing Cooperative concerned noise impacts and did not make reference to variable mandatory speed limits. Highways England has since brought forward plans to resurface the carriageway as part of these schemes with thin wearing course, also referred to as low noise surfacing, to address these and similar concerns.

8.5 A far larger number of responses were received to the air quality mitigation consultation, with 100 responses from representative organisations and businesses, and a further 727 responses from individual members of the public. As the proposed maximum speed of 60mph is below the national speed limit and would be set for a specific period it is a variable speed limit, though if it were to be imposed it would, within the relevant time period be the default speed limit rather than the national speed limit, unless variable speed limits of 40mph or 50mph were automatically set to reduce congestion.

- 93% of members of the public who responded to the consultation were opposed to the proposal to implement a maximum mandatory speed limit of 60mph between 07:00 and 19:00 seven days a week.
- 92% of businesses were opposed to the proposal.
- 67% of representative organisations and interest groups were opposed to the proposal, with groups representing local residents (33% of respondents in this category) being in favour.
- 64% of responses from central or local government organisations and the police were opposed to the proposal; those in favour (36% of respondents in this category) were overwhelmingly public health bodies or parish councils.

In a press release issued on 8 July 2014 announcing the start of work on the smart motorway schemes, the Secretary of State did not accept the proposed approach as the government's preferred option for managing the projected air quality impacts and instead asked Highways England to rigorously investigate alternatives as work progresses on the schemes in the next 12 to 18 months. If any proposals continue to include the need to impose a maximum speed limit, they must only apply when absolutely necessary. In particular, Highways England must look for alternatives that maintain the 70mph limit wherever possible, particularly when traffic tends to be lighter, such as at weekends and outside of peak commuting hours.

8.6 Highways England has considered all the responses to the consultations and carried out an analysis of those responses. Highways England continues to work closely with the emergency services and local authorities on these schemes to address the safety and environmental concerns raised. Using variable mandatory speed limits is now established practice in many parts of the country, including the southern end of the M1, the M25, the M4/M5 near Bristol and the M42 and M6 in the West Midlands, and respondents to the consultations were generally not opposed to the implementation of variable mandatory speed limits. Accordingly, the Department for Transport has decided that variable mandatory speed limits should be implemented on the M1 between junctions 28 and 35a, which will include all lane running at the relevant locations. Whether it is necessary to impose a maximum speed limit of 60mph to mitigate air quality impacts between set times will depend on the outcome of the work carried out by Highways England over the coming months. The Government is committed to bringing forward the improvement that smart motorway schemes will bring at these locations and therefore would only impose a maximum speed limit if

absolutely necessary. That maximum speed limit would as stated above act as a default maximum speed limit unless other variable speed limits (40mph, 50mph) are set for congestion purposes.

9. Guidance

9.1 The consultation packs issued by Highways England to stakeholders contained information on the operation of variable mandatory speed limits. These consultation packs were also published on the Highways England or the Gov.uk websites. Stakeholders included local authorities, members of the emergency services, road user groups and vehicle recovery operators. Stakeholders will continue to receive updates and news on the scheme implementation, with particular consideration given to the effects of the scheme on local residents, the travelling public and businesses. Prior to the commencement of the scheme operation road users will be made aware of it through the media and press releases.

10. Impact

10.1 The impact on business, charities or voluntary bodies, and the public sector is that smart motorways, through the introduction of variable mandatory speed limits, will benefit the motorist by helping to reduce congestion, be informative and improve journey times. It aims to reduce the impact of accidents and reduce driver stress.

11. Regulating small business

11.1 The legislation applies to small business.

11.2 To minimise the impact of the requirements on firms employing up to 20 people, the approach taken is to ensure that Stakeholders receive updates and news on the scheme implementation and operation. Results of the scheme will also be made available to stakeholders.

11.3 The basis for the final decision on what action to take to assist small business will be undertaken through consultation with stakeholders. It is however expected that the proposed measures will not impose any new or increased burden upon small businesses.

12. Monitoring & review

12.1 The operation of the smart motorway schemes between M1 junctions 28 and 31 and between M1 junctions 32 and 35a will be monitored and assessed to establish the effectiveness of the scheme on traffic flows, accidents and environmental factors. There will be a Post Opening Project Evaluation of the schemes 1 year and 5 years after it has opened. The purpose of the Post Opening Project Evaluation is to measure the business case aims and benefits of the scheme against what it is actually delivering 1 and 5 years after opening.

13. Contact

13.1 If you have any queries regarding the Regulations please contact Andy Kirk at Highways England Tel: +44 (0)121 678 8745 or e-mail: Andy.Kirk@highwaysengland.co.uk