

# M6 and M1 smart motorways

Incident and infrastructure investigations – summary report

Update 2022



# Introduction

## The Smart motorway evidence stocktake and action plan sought to gather the facts on smart motorway safety and set out an action plan to enable smart motorways to be as safe as possible.

Although all road journeys involve an element of risk, the stocktake established that the risk of death on smart motorways was less than on any other major road type.

Where concerns were raised about some specific smart motorway locations, we committed in the 2020 Action Plan to investigate what more could be done to help drivers be safe and feel safer. Where an intervention is considered likely to make a difference, we committed to look at making changes to the motorway at these locations.

Independent investigations were carried out into specific sections of the M6 and M1 smart motorways and [Smart motorway incident and infrastructure investigations reports](#) were produced for:

- M6 Junctions 5 to 6 (Bromford viaduct)
- M1 Junctions 10 to 13
- M1 Junctions 30 to 35
- M1 Junctions 39 to 42

In September 2021 we published independent investigation reports alongside our responses to the findings and the actions that we will take. Our actions are targeted at the specific issues identified by the independent investigation reports to improve safety at each of the locations.

Work to deliver these actions started straight away and many have now been completed. This year for example, in our [Smart motorways stocktake second year progress report](#), we report on enhanced use of variable message signs and the provision of additional signing for places of relative safety.

## Impact of the Government's response to the Transport Select Committee

In November 2021 the Transport Select Committee (TSC) reported on the [Rollout and safety of smart motorways](#) and made a number of recommendations. The Government, in its [response](#) published on 12 January 2022, agreed to take these recommendations forward. A key recommendation of the TSC's report was to pause the roll out of new all lane running (ALR) motorways yet to start construction until five years of safety and economic data is available. This included pausing the conversion of seven dynamic hard shoulder (DHS) to ALR schemes.

Two of the independent investigation reports (M6 Junctions 5 to 6 (Bromford viaduct) and the M1 Junctions 10 to 13) are on sections of DHS motorway. The pause of the DHS to ALR conversion programme affected the scope and timing of some of our actions on these two sections, as they were originally envisaged to be addressed as part of the upgrade from DHS to ALR motorway. We have reviewed these actions and where appropriate set-in place plans to deliver them independent of any upgrade to ALR.

## Update on our actions

This document provides an update on our delivery of all of the actions one year on from the publication of the [M1 and M6 infrastructure investigations](#), set in the context of the programme changes brought about by the Government's response to the Transport Select Committee's recommendations. Many of the actions are now resolved; the remaining actions relating to the ALR schemes are on track to be completed by March 2023. The actions which were impacted by the pause in roll out of ALR motorways are on track to be completed by March 2024 for the M6 Junction 5 to 6, and March 2025 for the M1 Junctions 10 to 13.

The key findings from each scheme investigation are detailed in the tables on the next pages, alongside the recommended interventions from the independent reviews and a progress update on the actions we are taking.



### M6 Junction 5 to 6 dynamic hard shoulder (Bromford viaduct)

The review found that slightly fewer collisions are happening per year after the dynamic hard shoulder scheme opened than before. The number of fatal collisions and the ratio of fatal and serious injury casualties has however increased in the period since the scheme was opened. The key findings focus on the risk of vehicles stopping in live lanes.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
<p>The key findings relate to live lane stops:</p> <p>a. a minor reduction in overall collisions since conversion to dynamic hard shoulder running based on the five years of operational safety data available.</p> <p>b. three fatal collisions have occurred since the smart motorway became operational in April 2014.</p> <p>c. two of the three fatal collisions involved stops in the hard shoulder when it was open to traffic and further injury collisions are related to live lane stops. These events are not frequent but have the potential to be high severity collisions.</p>	<p>Encourage use of places to stop in advance of the viaduct for discretionary stops or limping vehicles, by additional signage on the approach to Bromford viaduct. Above and beyond standards.</p>	<p><b>Being taken forward:</b> as part of scheme to upgrade this stretch of the M6 to ALR, additional signage will be installed to inform drivers of places to stop in an emergency. We will start later in 2021 with signs installed between junctions 4 and 5.</p>	<p><b>Ongoing:</b> we will be installing additional signage on the approach to Bromford viaduct as part of the safety enhancements we are making to the dynamic hard shoulder sections. Subject to detailed assessments as part of the design process, this work is expected to be completed by March 2024.</p>
	<p>Investigate possibility of constructing an additional place of relative safety<sup>1</sup> on junction 5 northbound exit slip road.</p>	<p><b>Being taken forward:</b> we have identified a location, and this will be included as part of the upgrade of the M6 J4 to 5 dynamic hard shoulder to ALR, due to start later in 2021 (subject to the necessary safety assessment being completed as part of the detailed design).</p>	<p><b>Ongoing:</b> we plan to install an additional place of relative safety on the junction 5 northbound exit slip road. Subject to detailed assessments as part of the design process, this work is expected to be completed by March 2024. This is in addition to our commitment to construct over 150 additional emergency areas to ALR sections in operation and construction by 2025.</p>

<sup>1</sup> A place of relative safety is also known as a place to stop in an emergency, which include motorway services, emergency areas and sections of hard shoulder, such as on slip roads.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
d. emergency areas are further apart on this section due to the constraints of the viaduct.	Continual sequence of signs with distance to next emergency area along the whole viaduct.	<b>Being taken forward:</b> additional signage will be installed on the viaduct. This will be complete before April 2022 (subject to sign and structural authorisations).	<b>Ongoing:</b> difficulty in sourcing materials caused delay to the completion of this action. It will now be completed by the end of summer 2022.
e. based on the number of live lane stops, the emergency areas appear to be underutilised and the status of the hard shoulder may not be obvious to all road users.	To better highlight their presence on approach, add larger more conspicuous signs at viaduct emergency areas.	<b>Being taken forward:</b> additional signage will be installed on the viaduct. This will be complete before April 2022 (subject to sign and structural authorisations).	<b>Ongoing:</b> additional, rather than larger signs are being provided. Final signs to be installed by the end of summer 2022.
f. the presence of emergency telephones adjacent to live lanes when the hard shoulder is open may encourage road users who have had to leave their vehicles to walk along the motorway. Their presence could also act as encouragement to stop, even when the hard shoulder is open as a running lane.	Consider hard shoulder monitoring CCTV based stopped vehicle detection system.	<b>Being taken forward:</b> Bromford viaduct is within the scope of the scheme to upgrade this stretch of the M6 to ALR which is due to start work in 2023. Stopped vehicle detection will be installed as part of the upgrade. In the meantime, we will implement an interim arrangement to more quickly identify stopped vehicles. This will be solely focussed on spotting stranded vehicles.	<b>Ongoing:</b> new procedures and equipment have been put in place in the control room and additional CCTV cameras have been installed on the viaduct. This will enable 24/7 CCTV monitoring of Bromford viaduct to identify stopped vehicles. Staff dedicated to this task have been recruited and are being trained so that monitoring can commence by the end of summer 2022.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
f. the presence of emergency telephones adjacent to live lanes when the hard shoulder is open may encourage road users who have had to leave their vehicles to walk along the motorway. Their presence could also act as encouragement to stop, even when the hard shoulder is open as a running lane.	Review opening and closing procedures and thresholds of hard shoulder to ensure it consistently matches traffic demand (i.e. not kept open longer when demand falls away).	<b>Complete:</b> it is expected that traffic levels will continue to grow, which means the hard shoulder will be used more frequently as a live traffic lane. On the M6 we have reviewed and will continue to review our operating procedures in light of this. We are aware that dynamic hard shoulders have the potential to cause confusion for drivers because the hard shoulder is sometimes in use for traffic and sometimes not. Converting these sections to all lane running means that drivers will have a more consistent experience.	<b>N/A</b>
	Review provision / retention of emergency roadside telephones on viaduct.	<b>Being taken forward:</b> emergency roadside telephones will be retained until the scheme to upgrade this stretch of the M6 to ALR starts in 2023, at which point we plan to remove them, as stopped vehicle detection will be installed. Telephones in emergency areas will be retained.	<b>Closed:</b> while the dynamic hard shoulder remains in place, the emergency telephones will be retained. CCTV monitoring to identify stopped vehicles on Bromford viaduct will commence by the end of Summer 2022. This will provide mitigation to the risk of road users walking along the motorway when the hard shoulder is open to traffic.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
f. the presence of emergency telephones adjacent to live lanes when the hard shoulder is open may encourage road users who have had to leave their vehicles to walk along the motorway. Their presence could also act as encouragement to stop, even when the hard shoulder is open as a running lane.	Coloured surfacing on 1.2 metre kerbed area between edge of the hard shoulder and parapet, with information signs for those stopped.	<b>Not taken forward:</b> coloured surfacing will not be provided as this area is not a place of relative safety for road users and it could also encourage it to be used as a walkway which would present a safety risk. We plan to install information signs as part of the upgrade to ALR which is due to start in 2023 (subject to agreement of a suitable message and structural authorisations).	<b>Closed:</b> information signs were intended for an ALR layout. We plan to install information signs if the pause to ALR rollout is lifted and this section is upgraded to ALR.
	Investigate the development and provision of a continuous strip along the edge of the viaduct that can be used to call for help e.g. “Press to alert help”.	<b>Not taken forward:</b> there is no proven technology which could be quickly implemented and this could potentially encourage road users to get out of their vehicle which is against our safety advice. The ALR upgrade will bring full stopped vehicle detection coverage which will identify stopped vehicles quickly, and in less time than it might take to exit a vehicle safely and access the call strip.	<b>Ongoing:</b> 24/7 CCTV monitoring of Bromford viaduct to identify stopped vehicles will commence by the end of summer 2022.  Over time the mechanism by which we identify stopped vehicles may evolve as we deliver on the commitment, in response to the TSC’s report, to add a way of spotting stopped vehicles on all dynamic hard shoulder motorways.

### M1 Junction 10 to 13 dynamic hard shoulder

The review found that fewer collisions are happening per year after the dynamic hard shoulder scheme opened than before, despite an average growth in daily traffic of 27% over that period. The decrease is noted after 2017 when the smart motorway operating system was recalibrated, our control room operating protocol was revised and junction 11a was opened. There have been eight fatal collisions between the scheme opening in December 2012 and January 2020. There were four fatal collisions in the three years prior to construction starting (from December 2006). A rise in collisions of serious severity has been noted scheme-wide, with rear shunts and lane changing being the predominant collision type. This is indicative of the short links between junctions, particularly junction 11, 11a, Toddington motorway service area and junction 12.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
a. Concerns over the reported mis-use of the hard shoulder and the potential risk of collisions given the live lane breakdown rate.	Display consistent and repeated messages confirming status of hard shoulder on existing signs.	<b>Resolved by ALR upgrade:</b> repeated signage is already in place and any risk will be eliminated by the upgrade of this scheme to ALR. Even more signage would overload drivers and potentially have a negative effect.	<b>Closed:</b> consistent and repeated messages confirming the status of hard shoulder are already displayed on the variable message signs (VMS) throughout the section. The introduction of messages on every VMS could overload drivers reducing the impact of other important messages, with the potential to negatively impact on safety. The levels of non-compliance of the hard shoulder will continue to be monitored.
	Increase number of verge-side signs, indicating if the hard shoulder is open or closed, after the entry slip road.	<b>Resolved by ALR upgrade:</b> verge side signs are already present, the work involved to implement new signs would not give sufficient, if any benefit as they would be removed shortly after installation for the ALR upgrade works. Also the upgrade to ALR will remove the risk.	<b>Closed:</b> dynamic hard shoulder misuse data shows a steady decrease since the start of January 2018. Previous assessments have not found any suitable locations for additional signs without compromising the message signs already in situ due to insufficient space in the verge. The situation will continue to be monitored.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
b. The arrangement to the south of junction 11 is constrained and a cluster of collisions is present, including a high proportion of lane changing collisions.	Review the viability of moving the start of the hard shoulder and provide additional signs.	<b>Resolved by ALR upgrade:</b> the work involved to implement new signs and white road lining would not give sufficient, if any, benefit as they would be removed shortly after installation for the ALR upgrade works.	<b>Closed:</b> the installation of additional signs has been explored and there are concerns that any additional signs, prior to the merge, may cause confusion. Early evidence suggests that there has been an improvement following the addition of a 'kick over arrow' on an existing variable message sign. It is not proposed to take further action but continue to monitor.
		<b>Additional - Being taken forward:</b> utilise existing variable message sign to display additional merging message. Completion due October 2021.	<b>Complete</b>

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
<p>c. A comparison of before and after collision data in the vicinity of Toddington motorway service area indicates that introduction of the dynamic hard shoulder scheme has not increased collisions overall. However, while the overall number of collisions between junction 10 and 13 has decreased, a reduction in collisions in the vicinity of Toddington motorway services has not been realised. Particular focus has been directed at the southbound entry slip road where a high proportion of the lane change collisions have been recorded.</p>	<p>Improve visibility at southbound entry slip road (concrete barrier).</p>	<p><b>Being taken forward:</b> conduct further assessment during 2021/2022.</p>	<p><b>Ongoing:</b> further assessment was completed. Work to replace the existing concrete barrier with a steel barrier which provides improved visibility, will be complete by the end of December 2022.</p>
	<p>Extend length of southbound entry slip road.</p>	<p><b>Being taken forward:</b> conduct further assessment in August 2021.</p>	<p><b>Ongoing:</b> the initial assessment was completed and found that there is scope for extending the merge. The area has some major physical constraints that could impact on the ability to deliver a full extension to the merge, therefore all options to improve the merge are being considered. Whichever option is taken forward, it is due to start construction in July 2024 and be completed by the end of March 2025.</p>

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
d. The arrangement to the south of junction 12 is a short length of ALR through Toddington motorway service area, with dynamic hard shoulder sections upstream and downstream of it. This removes the issues around an intermittent hard shoulder, however a cluster of collisions is present, specifically shunts and lane changing.	Additional signing and markings showing status of hard shoulder.	<b>Resolved by ALR upgrade:</b> limited space in this area means installing additional signing and marking would be disruptive and costly prior to the ALR upgrade which will remove this issue.	<b>Closed:</b> there is insufficient space to install additional signing. Mitigation has been provided by the addition of a pictogram on the proceeding variable message sign emphasising when the hard shoulder is closed. This location will continue to be monitored.
	Additional “traffic merging” hazard signs.	<b>Being taken forward:</b> during 2021/2022.	<b>Complete</b>
e. Pedestrian collisions and existence of potential risk factors, particularly through the southern section of the scheme and the built-up areas of Luton and Dunstable.	Use Walking Cycling and Horse Riding (GG 142) assessment process to review pedestrian facilities / access to motorway.	<b>Being taken forward:</b> assessment due for completion September 2021.	<b>Complete:</b> the assessment did not identify the need for any physical mitigation measures. This was agreed with stakeholders including the police and Milton Keynes public health board. We will continue to monitor in partnership with partners.
	Consider suicide prevention measures.	<b>Being taken forward:</b> assessment due for completion September 2021.	<b>Complete:</b> as above

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
f. Anecdotal evidence suggests that there are concerns about the reliability of the fixed text message signs, which indicate the status of hard shoulder after each entry slip road.	Investigate upgrading to digital / sign items	<b>Resolved by ALR upgrade</b>	<b>Ongoing:</b> a maintenance review of the existing roadside technology is being undertaken. Following the conclusion of this review, the appropriate repairs or replacement will be completed by the end of March 2025.
g. The current conversion of junction 13 to 16 from a conventional motorway to ALR could introduce another transition between operating regimes.	J13 to 16 ALR scheme to review if any mitigation measures are required.	<b>Complete:</b> continue to monitor. Also upgrade to ALR will remove this potential issue.	<b>Closed:</b> ALR became operational between junctions 13 and 14 in March 2022. No issues have been identified to date. The transition location at junction 13 will continue to be monitored.



### M1 Junction 30 to 35 all lane running

The review found that overall the average numbers of collisions per year have decreased since the smart motorway opened, due to a fall in the number of slight injury collisions. The number of serious injury collisions per year have increased, and fatal injury collisions have increased from one in three years to three in three years for the Junction 32 to Junction 35 section. Accordingly, the ratio of fatal and serious injury collisions has increased. Collision cluster locations were identified between Woodall motorway service area and Junction 31, between Junction 31 and Junction 32, and on the northbound approach to Junction 33. The actions we are taking forward are specifically designed to target the highlighted contributory factors in the incidents recorded.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
a. J33 northbound exit slip road cluster of collisions including shunts and on wet road surface.	Review of traffic signal timings to reduce queues at roundabout.	<b>Keep under review:</b> a major scheme is underway to improve traffic flows on the A630 Sheffield Parkway, which will incorporate a number of improvements aimed at reducing congestion at Junction 33 on the M1. The project, which is funded by Rotherham Metropolitan Council, is due to be complete in June 2022. The scheme will address existing and forecast issues of traffic congestion, improve safety, reduce the overall maintenance liability and deliver improvements in air quality. This is predicted to reduce congestion on J33 northbound exit slip road. The completed scheme will be monitored to see if any further action is required.	<b>Ongoing:</b> Rotherham Metropolitan Council is constructing the Rotherham Parkway and M1 J33 upgrade. Construction is underway and expected to be completed late autumn 2022.
	Queue detection system re-calibration.	<b>Keep under review:</b> as above, the Rotherham Metropolitan Council scheme is predicted to reduce congestion on the J33 northbound exit slip road. The completed scheme will be monitored to see if any further action is required.	<b>Ongoing:</b> Rotherham Metropolitan Council is constructing the Rotherham Parkway and M1 J33 upgrade. Construction is underway and expected to be completed late autumn 2022.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
a. J33 northbound exit slip road cluster of collisions including shunts and on wet road surface.	Investigate the level of grip provided by the road surface	<b>Complete:</b> skid resistance of the road surface in lane 1 and exit slip road has been checked and is well above the 'investigatory level' as defined in the technical standard.	<b>N/A</b>
	Review the drainage capacity and maintenance cycle.	<b>Complete:</b> a maintenance plan implemented to resolve a previous flooding hotspot has resolved the issue.	<b>N/A</b>
	Alternative exit slip road arrangement.	<b>Keep under review:</b> the Rotherham Metropolitan Council scheme is predicted to reduce congestion on the northbound exit slip road. The completed scheme will be monitored to see if any further action is required.	<b>Ongoing:</b> Rotherham Metropolitan Council is constructing the Rotherham Parkway and M1 J33 upgrade. Construction is underway and expected to be completed late autumn 2022.
b. J32 to 31 lane change collisions.	Lane destination markings on road.	<b>Not taken forward:</b> it is not appropriate to install lane destination markings as they are only used when a lane leaves the carriageway. To do so here is likely to discourage non-exiting drivers from using lane 1.	<b>N/A</b>
	Supplementary Advance Direction Sign on approach to J31 southbound.	<b>Being taken forward:</b> the installation of additional Advance Direction Sign and hazard road markings will be progressed.	<b>Ongoing:</b> road marking changes will be installed ahead of the Advance Direction Sign installation starting in August 2022. Completion of the work is planned for late summer 2022.
	Provision of hazard road markings.		

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
c. J31 to 32 cluster of wet collisions.	Drainage capacity and maintenance cycle	<b>Completed:</b> work has been undertaken to resolve a flooding problem on the northbound entry slip road.	<b>N/A</b>
d. North of Woodall Motorway Service Area to J31 - cluster of live lane breakdown collisions.	Add an emergency area to reduce places of relative safety spacing.	<b>Being taken forward:</b> an additional emergency area will be installed. Due to be completed by end of July 2022.	<b>Ongoing:</b> construction of the emergency area will commence in July 2022 and complete late summer 2022. This site is in addition to our commitment to construct over 150 additional emergency areas on ALR sections in operation and construction by 2025.
		<b>Being taken forward:</b> the maintenance regime will be amended, subject to environmental considerations.	<b>Complete:</b> vegetation clearance has been completed and an annual maintenance plan is in place. Further checks of visibility were carried out in June 2022 with no issues identified. Continued checks will be completed as part of routine inspections.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
e. Pedestrian incidents and local risk factors.	Use Walking Cycling and Horse Riding (GG 142) assessment process to review pedestrian facilities / access to motorway.	<b>Being taken forward:</b> the installation of anti-access fencing at the locations identified will prevent access to the motorway for pedestrians.	<b>Ongoing:</b> vegetation clearance will start at the end of the bird nesting season in August 2022 and construction is expected to be complete by March 2023.
	Consider suicide prevention measures.	<b>Being taken forward:</b> carry out feasibility and preliminary design of suicide prevention measures at five structures. Carry out further investigation and scoping work at a further five structures.	<b>Ongoing:</b> eight sites have now been reviewed, with three identified to take forward through the design process, this will begin during 2022/23.
f. Technology availability.	Investigate reasons for variable message sign reliability issues on the J31 to 35 sections.	<b>Being taken forward:</b> availability of variable message signs has been improved through replacement of power supply units	<b>Complete:</b> regional technology maintenance teams monitor sign and signal performance and availability. Faults are addressed as they arise.

### M1 Junction 39 to 42 all lane running

The review found that the scheme has significantly reduced congestion, despite daily traffic having increased by almost a fifth in the four years since the smart motorway section opened. The number of collisions per year has increased as the traffic has increased. A small rise in collisions of serious-injury severity has been noted scheme-wide and a cluster site at and to the north of Junction 39 has been determined.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
a. High rate of live lane breakdown incidents reported. Note however, that this has not manifested itself as a particularly high number of live-lane stop-related collisions.	Add specific signing for exit slip road hard shoulders as places of relative safety.	<b>Being taken forward:</b> we will add specific signing for exit slip road hard shoulders which could provide a place of relative safety as part of the stocktake action to increase the amount of approach signage to places to stop in an emergency. Due for completion September 2022.	<b>Complete</b>
b. Pedestrian collisions and potential risk factors, particularly in the Junction 39 to 40 link.	Use Walking Cycling and Horse Riding (GG 142) assessment process to review pedestrian facilities / access to motorway.	<b>Being taken forward:</b> the installation of anti-access fencing at the locations identified will prevent unauthorised access to the motorway for pedestrians.	<b>Ongoing:</b> vegetation clearance will start at the end of the bird nesting season in August 2022 and the construction is expected to be completed by March 2023.
	Consider suicide prevention measures.	<b>Being taken forward:</b> we plan to install crisis signs at M1 J40 and carry out a detailed assessment of installing higher parapets and emergency telephone as well as examining CCTV coverage of bridges. A detailed feasibility study will be taken forward.	<b>Ongoing:</b> crisis signs were installed at M1 J40 in December 2021. Feasibility work is underway to consider further measures including higher parapets.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
c. The arrangement to the north of Junction 39 contains some design compromises and a cluster of collisions is present.	Bend ahead warning signs.	<b>Being taken forward:</b> a review of signing will be carried out as part of a broader feasibility study on the junction (see 'alternative exit slip road layout' below).	<b>Ongoing:</b> the study showed bend ahead warning signs were not considered appropriate. Improvements to signage on the northbound carriageway and merge have however been identified as beneficial. The signage improvements will be progressed through the preliminary design process this year.
	Overhead primary direction sign to better reflect southbound exit slip layout.	<b>Being taken forward:</b> change 1-mile Advance Direction Sign to a different approved sign.	<b>Ongoing:</b> geotechnical investigations are being undertaken to allow the design to be completed.
	Explore provision of street lighting.	<b>Being taken forward:</b> initial analysis suggests street lighting and high reflectivity markings/studs could result in accident savings. We will carry out a detailed feasibility study and review environmental effects.	<b>Ongoing:</b> the initial feasibility study demonstrated that the introduction of street lighting will not offer good value for money.

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
c. The arrangement to the north of Junction 39 contains some design compromises and a cluster of collisions is present.	Lane destination markings and hazard lines for southbound exit slip road.	<b>Being taken forward:</b> hazard lines will be extended, subject to necessary approval. Surface lane destination markings will not be progressed as this would be unique to this stretch of the M1, and as such potentially lead to confusion for motorists.	<b>Ongoing:</b> hazard lines will be extended and completed by late summer 2022.
	Alternative exit slip road layout.	<p><b>Being taken forward:</b> a detailed feasibility study will be carried out to investigate the possibility of installing an alternative exit slip road layout. A review of signing will also be included.</p> <p><b>Additional - Being taken forward:</b> we will implement speed enforcement with a camera at J39, through either moving the speed enforcement camera from between J39 and J40 nearer to J39 on the northbound carriageway or adding a new camera (subject to technical viability).</p> <p><b>Additional - Being taken forward:</b> we will carry out a detailed feasibility study to review changes that could be made to the junction 39 layout. At the northbound entry slip road this could be through moving the white lining to the left, to give traffic more time to join the motorway. The study will also examine if the signs warning of merging traffic could be made higher so that they are more visible. At the southbound exit slip road this could be through removing the hard shoulder on the exit slip road to provide more capacity and reduce queuing on the main carriageway.</p>	<p><b>Ongoing:</b> a feasibility study of M1 J39 has been completed, this considered the southbound exit, northbound merge, signage and additional speed enforcement.</p> <p>The recommendation from this study is to make improvements to signage on the northbound carriageway and merge which will co-locate signs and move signs to improve visibility.</p> <p>Changes to the layout of the northbound merge and southbound diverge do not offer value for money so are not being progressed.</p> <p>Additional speed enforcement between J39-40 is not considered appropriate as speed does not appear to be a major contributory factor to collisions at this location.</p>

Independent review			
Key findings	Recommended actions	Highways England response - 2021	National Highways progress update - 2022
c. The arrangement to the north of Junction 39 contains some design compromises and a cluster of collisions is present.	Display variable speed limits earlier, prior to peak periods.	<b>Not taken forward:</b> this is deemed not appropriate on the M1 J39 to 42 scheme as the extra capacity has largely eliminated peak time congestion and the links experience high traffic flows and good journey times that would be impacted adversely by unnecessary speed limits.	<b>N/A</b>
	Display national speed limit off-peak.	<b>Not taken forward:</b> there is no evidence to suggest that this would provide greater control or improve driver behaviour at the junction. It would also be unusual for drivers to see these signal settings and it could affect driver speed compliance on other parts of the road network.	<b>N/A</b>

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