highways england

Smart Motorways Programme
M23 Junction 8 to 10 Smart Motorway

Summary of Statutory Instrument consultation responses

May 2018

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EXECUTIVE SUMMARY

The M23 Junction 8 to 10 smart motorways project (the scheme) is part of Highways England's smart motorways programme (SMP). Smart motorway infrastructure helps to regulate traffic flow and improve throughput with variable speed limits, signals and signing. As part of the scheme, the hard shoulder will be converted into lane 1, adding further capacity.

The M23 motorway forms part of the English strategic road network (SRN), connecting Crawley and Gatwick Airport to the M25 motorway and routes into London. Currently, the scheme extends from Junction 8 within Highways England Area 5 and extends to Junction 10 within Highways England Area 4. The boundary between the two areas is the A25 over-bridge.

A consultation paper was issued to 220 consultees, and the consultation was open to public participation through the Highways England and GOV.UK's websites. The consultation encouraged representative organisations, businesses and the public affected by the proposed regulations, to register their views with Highways England.

The consultation period began on 11 December 2017 and ended on 15 January 2018. This paper provides a summary of the consultation responses and details how they have been considered and taken forward. A total of 15 responses were received by the close of consultation period, and although a number of comments received are beyond the scope of the consultation, each one has been answered.

1. INTRODUCTION

1.1 Purpose

This document is intended to provide a summary of the responses received following the formal consultation on the introduction of variable mandatory speed limits (VMSL) on the M23 between junctions 8 and 10 and the permanent 50 mph speed limit on the westbound carriageway of Gatwick spur from M23 junction 9 to junction 9a. The consultation, which was undertaken between 11 December 2017 and 15 January 2018, provided an opportunity for stakeholders, such as road user groups and other interested parties, to comment on the proposals. Highways England has considered the comments raised by consultees and this document summarises its response to those comments.

1.2 Background

The M23 motorway is a strategic route for local and regional traffic, and plays a major role as an inter-urban regional route connecting Crawley and Gatwick Airport to the M25 motorway and routes into London. This section of the M23 carries more than 111,000 vehicles per day.

The scheme is part of the Highways England programme to add capacity to the existing strategic road network to support economic growth and maintain mobility. It's expected that the smart motorways scheme will:

- Increase motorway capacity and reduce congestion
- Provide more reliable journey times for the customer
- Smooth traffic flows
- Reduce the severity of accidents
- Increase and improve the quality of information for the customer.

The use of VMSL is an essential element in achieving the objectives above. Through the introduction of technology, the aim is to make the best use of existing road space.

Why do we need a permanent 50 mph speed limit on the westbound carriageway of the Gatwick spur?

The scheme includes the introduction of all-lane running on Gatwick Spur on the westbound carriageway. It's proposed to provide a reduced permanent speed limit of 50 mph on the westbound spur to mitigate for not having queue detection or warning systems in place. Three lanes for the whole length of the westbound carriageway will allow lane designations for the roundabout to be provided earlier, increasing the weaving length. Whilst the loss of the hard shoulder on the westbound carriageway has some potential adverse safety impacts, this is further offset by the safety benefits achieved through removal of illegal stopping/parking.

1.3 Consultation topic

The consultation aimed to seek views on the implementation of VMSL on the M23 junction 8 to 10 and a permanent 50 mph speed limit on the westbound carriageway of Gatwick Spur from M23 junction 9 to junction 9a, and no other aspect of the scheme.

The intention was to seek views on the proposal, specifically on how the proposal could affect individuals, their organisations or those they represent.

1.4 Document structure

Section 1 provides a background to the consultation.

Section 2 describes how the consultation was conducted and how responses from consultees

were considered.

Section 3 contains a summary of the consultation responses and analysis of each response.

Section 4 contains a summary of the approach to the consultation and the recommended way forward.

2. CONDUCTING THE CONSULTATION EXERCISE

2.1 What the consultation was about

The consultation provided the opportunity for interested parties to comment on the proposal to implement VMSL for the M23 junctions 8 to 10 smart motorway All Lane Running scheme, and the introduction of a permanent 50 mph speed limit on the westbound carriageway of Gatwick Spur from M23 junction 9 to junction 9a.

2.2 Legislative changes

Regulations have been proposed to be made under section 17(2) and (3) of the Road Traffic Regulation Act 1984 ("the 1984 Act") for the implementation of VMSL for the M23 junction 8 to 10 smart motorway all lane running scheme. The proposed Regulations will restrictdrivers from driving within the area of the smart motorways scheme at a speed exceeding that displayed on the speed limit signs, or the national speed limit where no other speed limit sign is displayed.

The relevant legislative power in the 1984 Act permits the making of Regulations that regulate the manner in which, and the conditions subject to which, motorways may be used by traffic authorised to use such motorways.

Within the M23 junction 8 to 10 smart motorway all lane running scheme it will be an offence to use a motorway in contravention of Regulations applying to the scheme made under section 17(2) of the 1984 Act. A more detailed explanation of the changed regulations is given within the 'M23 junction 8 to 10 smart motorway all lane running scheme consultation document for statutory instrument'. [1]

2.3 How the consultation was conducted

The consultation was carried out in accordance with the government's consultation principles which are available here. The consultation paper was issued to 220 stakeholders as mentioned in Appendix B of the consultation report on 11 December 2017. The consultation documents were made available on Highways England's and GOV.UK's websites, allowing the public to comment on the proposals. The consultation closed on 15 January 2018.

2.4 Publicising the consultation

To publicise the consultation, we wrote to a large number of statutory consultees, all of which can be found listed at the back of our consultation document, before the consultation began, advising them that we would be holding the consultation and requesting responses.

2.5 Number of responses

We had a total of 15 responses to the consultation.

Five of these were from the 220 consultees that we wrote to, these being Gatwick Airport Limited, Tandridge District Council, Cllr Jonathan Ash-Edwards, Deputy Leader of Mid Sussex District Council, as well as representatives from West Sussex County Council and Reigate and Banstead Borough Council. We also had responses from three businesses and a further seven were from members of the public.

We feel the responses we received gave us a good insight to views of those consultees affected.

2.6 Questionnaire analysis

Within the response questionnaire, we asked three questions, each with a yes/no response. There was then a section below each question for comments to further explain the reason for their answer. Most people took up the opportunity to explain the reasoning for their answer.

Question 1
Do you consider that the proposal to introduce the smart motorway scheme on the M23 between junctions 8 and 10 and a permanent 50 mph speed limit on the westbound carriageway of Gatwick Spur will lead to an improvement in travelling conditions on this section of motorway?

Question 2
Are there any aspects of the proposal to introduce the smart motorway scheme on the M23 between junctions 8 and 10 and a permanent 50 mph speed limit on the westbound carriageway of Gatwick Spur which give you concerns?

Question 3
Are there any additional comments you would like to make about the proposal to introduce the smart motorway scheme on the M23 between Junctions 8 and 10 and a permanent 50 mph speed limit on the westbound carriageway of Gatwick Spur?

The purpose of the questions we used was to find out what kind of support the introduction of the scheme is receiving from affected organisations and members of the public, we also wanted to know of any concerns the introduction of the scheme and VMSL was causing. We wanted to know of any concerns around the implementation of a mandatory 50 mph speed limit on the westbound carriageway of Gatwick Spur from M23 junction 9 to junction 9a. This was with the intention to either lay people's concerns to rest or take them into account and amend the scope or design of the scheme.

3. SUMMARY OF RESPONSES

3.1 Introduction

We have had an equal mix of support for the scheme and concerns raised, both for the implementation of VMSL on the M23 between junctions 8 and 10, and for the scheme itself, as well as concerns raised over the introduction of a mandatory 50 mph speed limit on the westbound carriageway of Gatwick Spur from M23 junction 9 to junction 9a. We have responded to each of the points raised on an individual basis, addressing all questions/comments and queries mentioned.

This section has been structured by highlighting each of the key question themes that emerged in the consultee responses.

3.2 VMSL doesn't work/isn't value for money

Concerns were raised around the belief that VMSL doesn't work and isn't value for money. One consultee commented *that "Experience of variable signs elsewhere often results in unnecessary delays and indecision when they are switched on too early…I do not believe that the benefits of the proposal outweigh the cost and disruption of construction."*

Below is a summary of our response.

"The business case benefits include both monetised and non-monetised benefits. The principle benefits are derived from journey time savings and personal injury accident savings. Potential traffic growth of known developments is factored into the traffic model, this includes known forecasts of increased passenger movements at Gatwick and the resultant traffic increase."

"The scheme currently has a benefit cost ratio (BCR) of >2.5 which represents good value for money. The BCR will be updated in the revised business case, to consider the finalised target cost for the works and the latest benefits and dis-benefits. However, this is unlikely to change significantly."

Another consultee made the comment that introducing VMSL at peak times has an adverse effect on the motorway, causing long delays at busy times. They said: *"I commute through this section of motorway everyday…I can understand the enforcement of the variable speed limit when workers are present, but feel this should be avoided at peak times as enforcing such a speed limit will cause severe disruption at peak times, when there are few alternative routes available to myself and fellow motorists that commute on this stretch."*

We responded with:

"A smart motorway is an upgraded section of motorway that has technology installed to monitor and manage traffic flow as well as the hard shoulder used for traffic. As well as the additional capacity from the extra lane, the technology manages traffic using variable speed limits which smooths traffic, reducing frustrating stop-start flow, and improves journey reliability. The technology is used to support the improved response to incidents, using the signs and signals to close any lane in advance of the incident scene.

"Whilst it is true that speed limits are introduced while the motorway is most congested, this has been shown to have benefits on journey times rather than cause traffic to slow down."

We provided evidence of this by providing a summary of the results from the M25 smart

motorway schemes, which have been operating for three years.

"Monitoring of the all-lane running smart motorways on the M25 (J5-7, J23-27) over their first 12 months has shown us some positive trends about how they are performing. On these smart motorways, traffic flows have increased and commuters on average are saving time on their journeys and that journey time reliability has improved. There is now far more certainty about when they will get to their destination. As forecast, safety has been improved on these sections of the M25."

3.3 The scheme isn't needed/ will increase likelihood of incidents

Some consultees believe that there isn't actually a capacity problem on the M23 between junctions 8 and 10, and that the congestion derives from congestion at the junctions themselves, and as such the smart motorway scheme isn't necessary. One consultee commented *"The proposed VMSL is intended to increase capacity and reduce congestion. However, a major factor affecting congestion on the M23 is the inability of the A2011 and A264 to cope with current traffic levels leading to traffic building up on the exit slip roads at junction 10 which affects traffic flows on the M23 as the queues to can extend for several miles on the M23 itself."*

We responded to the specific concerns relating to congestion around junction 10 of the M23 with:

"We are proposing lane-drop and lane-gain arrangements at Junction 10 southbound diverge & northbound merge as part of the smart motorway scheme.

"The area in the north-west quadrant of the junction is going to be developed for housing. The housing developer will improve junction 10 by adding lanes on both diverges and on the gyratory. This improvement will contribute to improved traffic flows and reduce congestion. The overall traffic modelling for the scheme included the smart motorway and developer-funded improvements at junction 10 and the north-facing slip road. Both designs include provision for the forecast increased volumes of traffic."

Another consultee thought that the proposed expenditure on this scheme is premature and currently unnecessary, stating *"I often use this section of the M23 and rarely encounter severe congestion or even congestion. When there is congestion it is mainly at the M23 / M25 junction, sometimes at the M25 / M23 junction and sometimes at the M23 Gatwick turn (J 9) This proposal does not address those issues."*

Our response to this concern, which is an extract from the current business case for a smart motorway from both a regional and national perspective, is given below:

"National network performance delay intelligence in 2012/13 shows the M23 junction 8-9 (M25 to Gatwick spur) in the top 10% with vehicle hours delay. These issues will become more acute as Gatwick expands, and makes the delivery of the M23 smart motorway project particularly important.

"The motorway suffers from reduced speeds in the southbound direction on the approaches to Junctions 9 and 10 and in the northbound direction on the approach to Junction 8. In addition to this, the scheme links also operate close to capacity in the peak hours and the journey times in the AM and PM peak periods are substantially more variable than overnight (free flow) journey times. Smart motorway technology improves journey time reliability by adding capacity and smoothing traffic flows.

"The scheme will address the 7th of the top 10 least reliable journey-time locations on the route (1 April 2012 to 31 March 2013). The M23 between junction 8 and 9 has the

lowest on-time reliability measurement of 55.8%. The location ranks 33rd nationally, as having the least reliable journey times.

"The M23 lacks comprehensive MIDAS (vehicle detection) coverage and this is a contributing factor to the delays suffered which will be addressed as part of the scheme. This technology coupled with side fire radar enables the operatives at the Regional Control Centre to improve the dynamic management of the network by locating where delays are occurring and setting appropriate variable speeds and lane management."

3.4 Concerns with the proposed 50 mph limit on the Gatwick Spur

We had a number of responses raising concerns over the proposed 50 mph speed limit on the westbound carriageway of Gatwick Spur from M23 junction 9 to junction 9. One person commented *"…50 mph is a dangerous proposal. 50 mph means that some cars sticking strictly to the limit will be overtaken by LGVs causing increased manoeuvres, and large vehicle in lanes 2 and 3. If not more dangerous it makes driving more frightening! So, 60 mph is the better option"*

To address the responder's concerns, we explained *"Currently the 85th percentile speed on the M23 Gatwick Spur is 50 mph and reducing the speed limit will not dramatically reduce the speed of vehicles. The speed limit will however help improve the safety of that link once the hard shoulder is removed, particularly in the vicinity of junctions 9 and 9a where traffic is merging and weaving."*

3.5 What is included in the design?

Several consultees asked about what the scheme design would include. Such as the response we received asking: *"Will the works include a realignment of the M23 northbound junction with the M25? At the moment, it is a key cause of congestion, as traffic has to turn off the lanes which continue (almost empty) to Croydon. Will there be dedicated lanes for M25 clockwise and M25 anti-clockwise in advance of the junction?"*

Our response was:

"The M23 Junction 8 northbound diverge is a strategic junction where the majority of the vehicles are leaving the M23 to join the M25. The 2033 design diverge flows are considerably larger than the downstream mainline flows on the M23 mainline. The diverge flows are large enough to warrant four lanes on the slip road. The flows continuing along the M23 mainline are minimal in comparison. In the existing circumstances there is often heavy queuing along the slip roads and in some cases, this extends back onto the M23 mainline due to the existing layout and large peak flows. There is a need to find a suitable layout that meets both traffic and operational aspects. For the J8 northbound diverge a non-standard layout, two-lane drop diverge is proposed. The two lanes will develop in to four diverging lanes. At the diverge nosing there will be six lanes in total. Two lanes for the M23 Northbound to M25 westbound (Heathrow) traffic, two lanes for the M23 northbound to M25 eastbound (Dartford) traffic and two lanes for the traffic heading towards Croydon on M23 northbound mainline. The proposal is sufficient for the traffic flows estimated for the design year 2033."

A number of consultees were interested to know why widening the eastbound M23 J9a-9 Gatwick Spur road hasn't been included. Based on their own modelling, one consultee commented *"The provision of an additional lane westbound will improve the resilience of the network, principally in the AM peak. However, to ensure a resilient network in the PM peak period and at all other times of the day the proposed improvements should be replicated on the eastbound carriageway. We therefore strongly encourage Highways England to amend the smart motorways scheme to include the provision of three running lanes for traffic on both the eastbound and westbound carriageways of the M23 Spur."*

Our response was:

"We understand your concerns regarding not providing a 3rd lane on the eastbound carriageway of Gatwick Spur…. We agree with the outcome of your modelling and the similarity in traffic flows and as a result an increased length of diverge to Junction 9 on the Eastbound spur will be provided as part of our scheme. Our modelling also shows that Junction 9a is acting as a throttle to traffic wishing to travel eastbound on the spur road. Therefore, an additional lane on the whole of the eastbound spur would do very little to ease congestion and hence there is no economic case for its provision. The extent of the smart motorway scheme does not include improvements to Junction 9a."

Another wrote to address their concerns over junction arrangements, saying: *"[Junction arrangements are] surely a major factor in creating congestion on the M23? As a daily user of the M23 my journey is hindered by constrictions at the top end of the motorway when it joins/leaves the M25. Namely the reduction in lanes on both sides. This could easily be solved by using the redundant hard shoulder to stop vehicles having to merge so much.*

"Driving past Junction 9 in the morning rush, I see vehicles endlessly queuing to leave the M23 southbound and then at the end of the day join the congested carriageway as the queues disturb the other lanes. Surely the arrangements for Junction 9 need looking at, otherwise the queues will only continue - negating the ALR benefits? Obviously making the junction grade-separated would help but presumably not a quick or cheap fix. However, extra lanes could be added for traffic coming north and joining north away from the roundabout to reduce pressure."

Our response below, detailed our improvement plans for each of the junctions:

J8 improvements

"The M23 Junction 8 northbound diverge is a strategic junction where the majority of vehicles are leaving the M23 to join the M25. The 2033 design diverge flows are considerably larger than the downstream mainline flows on the M23 mainline. The diverge flows are large enough to warrant 4 lanes on the slip road. The flows continuing along the M23 mainline are minimal in comparison. In the existing circumstances, there is often heavy queuing along the slip roads and in some cases, this extends back onto the M23 mainline due to the existing layout and large peak flows. Hence there is a need to find a suitable layout that meets both traffic and operational aspects. For the J8 northbound diverge a non-standard layout, 2 lane-drop diverge is proposed. The 2 lanes will develop in to 4 diverging lanes. At the diverge nosing there will be 6 lanes in total. 2 lanes for the M23 Northbound to M25 westbound (Heathrow) traffic, 2 lanes for the M23 northbound to M25 eastbound (Dartford) traffic and 2 lanes for the traffic heading towards Croydon on M23 northbound mainline. The proposal is sufficient for the traffic flows estimated for the design year 2033."

Junction 9 improvements

"Lane-drop and lane-gain arrangements are proposed at Junction 9 northbound diverge & northbound merge. Lane drop and lane gain arrangements are proposed at Junction 9 southbound diverge & southbound merge.

"Traffic models have been developed by our consultant to help assess whether the proposed forecast year schemes at Junction 9 of the M23 can accommodate the forecasted growth in traffic by the design year of 2033.

"In summary, the model suggests the following:

- *Increased demand in the 2033 forecast year results in significant increases in journey times through the junction, and to queue lengths on all approach arms;*

- *Introducing the Segregated Left Turn Lane (SLTL) and removing the traffic signal control and replacing with a priority junction at the northbound off-slip mitigates against the increased demand;*

- *Increasing the length of the existing eastbound SLTL on the M23 spur gives additional benefit to the performance of the junction. The flare lane length is increased by approximately 100m it is felt that lane a (leading to the J9 gyratory) will be used more by the traffic and therefore help reduce the queuing on the EB carriageway.*

"It is also proposed to convert the hard shoulder on the Gatwick Spur to a running lane on the westbound carriageway. This will allow smoother traffic movement and reduce delays at J9 entry to the Spur road.

"Introducing lane drop on the southbound and northbound diverges at J9, removing the traffic signals at the northbound off-slip, introducing SLTL and the 3rd lane on the Gatwick spur in the westbound direction will improve traffic throughput and reduce congestion."

J10 improvements

"Lane-drop and lane-gain arrangements are proposed at Junction 10 Southbound diverge & Northbound Merge as part of the Smart Motorway scheme.

"The area in the north-west quadrant of the junction is going to be developed for housing. The housing developer will improve junction 10 by adding lanes on both diverges and on the gyratory. This improvement will contribute to improved traffic flows and reduce congestion. The overall traffic modelling for the scheme included the Smart Motorway and developer-funded improvements at junction 10 and the north facing slip road. Both designs include provision for the forecast increased volumes of traffic."

3.6 Size and spacing of emergency refuge area / loss of hard shoulder

Another concern raised was that the removal of the hard shoulder is likely to lead to more accidents, and the distance of 2,750m between Emergency Areas is far too large. One responder said: "*If a car experiences a tyre blow-out or a gear box failure it cannot travel nearly 3km to reach safety.*

"With no hard shoulder there will be significantly longer delays whenever there is a breakdown, which would currently pull over onto the hard shoulder and in future will require speed reductions and closed lanes."

Another commented *"Permanently changing the M23 to a 'smart' motorway is not the safe way to improve the road. The hard shoulder exists to provide a safe refuge for cars (and their passengers) that have broken down. It provides a smooth route through for emergency vehicles when there is a blockage or crash that they need to attend to as quickly as possible. Drivers can be unsure as to when they can and can't use the hard shoulder on 'normal' motorways. Lane gantries signing whether the hard shoulder should be used or not are confusing to people who have not encountered this system before (e.g. foreign vehicles)."* In support of these comments, the RAC, AA and senior traffic officers were referenced.

An extract of our response is included below:

"Smart motorways with a dynamic hard shoulder have been in operation in England since 2006, and have demonstrated that the hard shoulder can safely be used as an additional traffic lane, by providing emergency areas and using traffic monitoring and signalling technology to create a controlled environment. In 2014, we used the experience gained from safely operating these sections of motorway to produce an improved design known as 'all-lane running', which is the current standard for new smart motorways. This involves permanent conversion of the hard shoulder to a running lane, as well as fewer gantries and greater use of verge-mounted signals to present information to drivers in a simpler way.

"It is important to note that the hard shoulder does not provide a safe place to stop; 8% of fatal motorway accidents take place there. Evidence shows that most hard shoulder stops are not connected with a breakdown, and involve drivers exposing themselves to unnecessary risk; we also know that most breakdowns are not caused by faults which require an immediate stop. All-lane running eliminates non-emergency hard shoulder stops, while providing a place for drivers to stop away from the carriageway in an emergency. Emergency areas are provided at regular intervals, and we advise drivers to stop in one of these in the case of an emergency such as a critical vehicle fault, or if the situation does not require an immediate stop, to leave the motorway at the next junction or service area. We are currently trialling a range of measures to make emergency areas more visible, including orange surfacing and improved countdown signing showing the distance to the next emergency area.

"The all-lane running design minimises the use of nearside barrier where it is safe to do this, allowing the verge to be used as a 'soft shoulder' if necessary. If a driver is unable to reach a place of safety, the electronic signals can be used to close lanes, display warning messages and slow down the approaching traffic, providing protection which is not available on a high-speed dual carriageway or most standard motorways. We have also recently developed a radar-based stationary vehicle detection system, which will allow signs and signals to be set more quickly in response to a breakdown."

3.7 Communication

In one response, the consultee provided some comments regarding the communication problems they have experienced with this scheme.

"As a key strategic stakeholder we are disappointed with the level of engagement that has taken place thus far and we have raised this with Highways England…Moreover, we have also been frustrated by the short notice given in advance of survey and preparatory works… As the project moves into construction an effective, timely and co-ordinated approach to communications with [us] must be taken by Highways England and its contractors so that we can most effectively support the project."

Within the M23 J8-10 project team, we are committed to providing as much information to the public and our stakeholders as possible with complete honesty. We are drawing up our plans for keeping stakeholders up to date, this includes regular website updates and newsletters. We responded to this concern with the following:

"Highways England has set in place a chain of communications with a key point of contact to help overcome the understandable concerns that were raised early in the project. It is envisaged that this process…will enable improved relations for this project.

"The ongoing engagement will include close working with [you] to ensure the partnership brings forward highway arrangements to support all highway users on the network."

Another consultee talked about the need for clear communication. They commented:

"Close working and clear and early communication will be required to ensure the disruption caused by these works are minimised as far as possible and communicated as widely as possible to allow forward planning by businesses, commuters and visitors to the area."

An extract of our response is below:

"*The M23 J8 to 10 has an overarching scheme communications plan which governs communications for the diverse stakeholders to ensure that information distribution is managed and monitored effectively. [Stakeholders] will receive information as and when appropriate, this will allow [them] to provide timely responses and to communicate details of planned works and diversions to [their] businesses and their people to ensure they have sufficient time to make the necessary arrangements so that their businesses can continue to operate while the works are carried out. We would however, advise that you visit the dedicated scheme website at http://roads.highways.gov.uk/projects/m23-junctions-8-to-10-smart-motorway/ and sign up to receive regular information."*

3.8 Environmental impact

Within the consultation and through general correspondence, we have received many concerns raised over noise and air quality impacts of the scheme. Specifically, that noise levels from the M23 are already high and that these will only increase with the scheme. A few asked whether noise barriers would be placed at specific locations, these were responded to individually. Regarding noise and air pollution, one consultee commented *"…the biggest issues for our community are pollution i.e. environmental noise and noxs/soxs plus carbon monoxide. Can we ask that noise reduction defences are bolstered to reduce the impact on local residents…I presume that a reduction in speed has a direct correlation to a drop in emissions from the traffic?"*

We replied with:

"The impact of the scheme on local air quality is influenced by both the change in speed and the change in traffic flow with the relationship between speed and emissions varying depending on vehicle type. For motorway traffic, the highest emissions occur at the lowest average speeds when the road is congested. Speed restrictions can help improve air quality through a smoothing of traffic flow, with a reduction in congestion and associated acceleration and breaking. The M23 scheme includes the application of variable speed limits, which react to road conditions to ease congestion, balancing some emissions from the increase in traffic flow. The air quality assessment for the Scheme found that there were no exceedances of national air quality objectives at sensitive locations either with or without the scheme and changes to local air quality with the scheme were found not to be significant.

"A reduction in speed will result in a direct decrease in noise level, however a speed reduction would potentially have other impacts that would need to be considered. Guidance on the relationship between speed and noise, shows the average reduction in noise level from the M23 between 70mph and 50mph would be about - 2.5dB. It should be noted that this would not necessarily result in a -2.5dB reduction in noise level at dwellings nearby, as the noise at each individual dwelling is made up of contributions from all nearby noise sources and not just the noise contribution from the M23."

Another individual commented on the foliage being used as a sound barrier and which is currently being removed, saying *"There is a very narrow band of trees along [our] particular stretch of motorway that at present offers us some protection from the traffic noise. [You] have recently started cutting down these trees resulting in increased traffic noise…We understand that the trees will be replanted in time but would not provide any*

significant noise barrier for up to 20 years!"

We replied with

"The subject of the effect of reduced foliage causing an increase in noise level, is not well documented, but most research agrees with Highways England's Design manual which states: "The use of shrubs or trees as a noise barrier has been shown to be effective only if the foliage is at least 10m deep, dense and consistent for the full height of the vegetation". For a situation where a narrow band of vegetation is to be removed, we would not expect to see a perceptible increase in noise levels as a result.

"Where tree clearance has taken place as part of the preliminary works, mitigation planting is proposed to replace lost vegetation. The replacement planting will comprise a combination of native linear belts of shrubs and trees together with native infill shrub planting, this planting is designed to replace vegetation lost as part of the scheme and to mitigate any potential effects of the proposed scheme."

Another commented *"There is no discussion in the consultation document of environmental impacts. What is the impact of additional light pollution from the overhead gantries? What is the air pollution impact from stationery traffic caused by lane closures for broken down vehicles?"*

Our response:

"You referred to there being no discussion in the consultation document of environmental impacts, the consultation was on the smart motorway operations and mandatory speed limits. For the environmental impacts we would refer to the Environmental Study Report (ESR). With regards to light pollution, it is acknowledged that there will be an increase in the quantity of signals, variable message signs (VMS) and gantry signs across the length of the proposed scheme. To minimise obtrusive light the design is based on luminaire tilt angles of zero degrees. The viewing angle of the technology equipment is relatively small and is directed down toward the c/way and the oncoming traffic. This will ensure the designed installation will emit no light above the horizontal plane.

"For the majority of the scheme the motorway will remain unlit, any additional introduction of associated ambient lighting that results from proposed signals, VMS's and gantry signs will not create significant light spill across the adjacent landscape including residential properties. There will be a degree of motorway corridor vegetation (trees) retained as part of the proposed scheme together with proposed replacement (mitigation) planting in areas of vegetation loss resulting from construction works. This mitigation will assist with reinforcing a buffer of vegetation between the carriageway and the wider landscape.

"It is acknowledged that the proposed lighting and technology scheme will introduce new elements including changes to the existing and retained lighting columns, including replacing the lighting components and introducing new lighting infrastructure. But through the design of the lighting provisions including signals, VMS's and gantry signs and the level of retained and proposed vegetation, additional light spill would create an insignificant impact based on the current baseline."

We also had environmental concerns raised over the necessary erection of overhead gantry and verge signage at regular intervals. The consultee commented *"As the Motorway Network passes through our district which is 94% greenbelt we request the new and modified scheme components such as new signage, replacement bridges, and Emergency Rest Areas will be supported by appropriate location-specific mitigation, such as replacement planting in order to minimise effects on the landscape, the openness of*

the greenbelt, or on visual amenity, so far as is possible. Where the motorway network is in close proximity to settlements and residential development we ask Highways England to explore noise attenuation as part of the scheme.

"[We] would further invite Highways England to explore…the installation of an increased capacity drainage culvert at Smallfield during the Smart Motorway works in order to minimise disruption to the Strategic Road Network." We would further also strongly encourage Highways England to conduct maintenance work on the attenuation areas at this location as part of the Smart Motorway scheme."

Our response is outlined below:

"Your concern around the erection of overhead gantries and verge signage along the stretches of the motorway in the greenbelt area has been considered throughout the design process and subsequent landscape and visual impact assessment.

"Collaboration across the project team's disciplines has resulted in amendments being made to the scheme design to mitigate potential impacts upon landscape and visual receptors. This has taken the form of adjusting the locations of infrastructure to reduce potential impacts where sensitive receptors are nearby as well as proposing mitigation planting where space allows to reduce potential impacts upon sensitive receptors; such as residential properties and public rights of way.

"A noise assessment has been undertaken as part of the development of the scheme design. This assessment has identified and assessed the predicted change in noise level for all noise sensitive receptors located near to the scheme. The outcome of this assessment was that four new noise barriers, totalling around 1.8km in length, will be provided as part of the scheme. In addition, the existing hard shoulder and the lane nearest to the central reserve will be resurfaced with a new low noise road surface as part of the works."

With regards to the query regarding installing an increased capacity drainage culvert at Smallfield, we responded with:

"Maintenance of the drainage culvert at Smallfield and other existing drainage features do not form part of this project unless they are critical to the operation of the Smart Motorway. Any maintenance related activities are carried out by our Service Provider AOne+ who can be contacted on 01732 446 800. [We] have passed on your concerns to our Highways England Operations team who look after routine maintenance. They are led by Dominic Haydon who can be contacted as follows dominic.haydon@highwaysengland.co.uk. I am sure that Dominic or one of his team members would be willing to discuss ongoing drainage/flooding issues with all key stakeholders as you suggest.

"As part of the Smart Motorway scheme we assessed the existing and proposed drainage solutions. We have provided additional attenuation and flow control measures that will ensure that the discharge rates will be no greater than existing and that pollution control is enhanced."

Disruption during construction/efficiency scheme during construction

A significant proportion of correspondence that Highways England receives is from regular users of the motorway network regarding disruption during construction. An example of this is from one of the responses we received to our consultation.

"[We're concerned with] the impact on the area and businesses while the works are

carried out between 2018 and 2020 [and] the impact on the non-strategic / local road network both while the works are on-going and once they are completed."

We responded with the following *"The majority of the road works will be carried out during the day, however for safety reasons and to ensure the impact of the road work activities on the travelling public is minimised, it will be necessary to carry out a proportion of the road works at night and on the weekends. These works will be planned and publicised in advance of it occurring.*

"During the works period, three trafficked lanes on the motorway will be maintained during peak hours. This will restrict and limit the available working area to construct the works. Additional working area will be obtained during the night time off peak periods, when lane reductions will be undertaken.

"With regards to the impact on the non-strategic / local road network both while the works are on-going and once they are completed; nothing has been done on the local network but Highways England are fully engaged with the local highway authorities, Network Rail, train and coach operators."

4. SUMMARY AND RECOMMENDATIONS

4.1 Summary

Every response that we received to the consultation of variable mandatory speed limits (VMSL) on the M23 junction 8 to 10 (the scheme) and a permanent 50 mph speed limit on the westbound carriageway of Gatwick Spur from M23 junction 9 to junction 9a, which provided contact details received a reply with the intent to address people's concerns regarding the scheme and to answer any queries, even those that were not directly related to VMSL or the 50 mph speed limit. There are no responders who have not been provided with a response.

We held this consultation as we believe it is important for us to know the public's views about the scheme and the introduction of VMSL and the 50 mph speed limit on the westbound Gatwick Spur, as they will be the users of the scheme when it is complete. We also felt it necessary as it was an opportunity for individuals and organisations to raise any concerns to Highways England which required action. We are pleased with the responses we received which gave a sense of both the positive and negative aspects of the scheme.

We also have an open inbox for the scheme which is regularly monitored; all emails sent to this inbox from members of the public receive a response to help answer questions that they may have.

4.2 Recommendations

The findings of the VMSL consultation lead us to conclude that progressing with the introduction of Variable Mandatory Speed Limits between junctions 8 and 10 of the M23 as a part of the smart motorway scheme and the introducing a permanent 50 mph speed limit on the westbound carriageway of Gatwick spur from M23 junction 9 to junction 9a are appropriate for this scheme.

We paid close attention to the consultation submissions and in response to a concern about the lack of an extra lane on the eastbound carriageway of the Gatwick Spur, we have enhanced the design by the provision for an increased length of diverge to Junction 9 on the eastbound Gatwick spur, to be provided as part of our scheme.

The concerns raised regarding the introduction of Variable Mandatory Speed Limits were considered within the scope of the whole programme. It was concluded they were not on a scale that would prevent this aspect of the programme. Therefore, the VMSL will proceed as planned as for this scheme.

Many of the concerns raised had already been previously considered in the design stage and information provided from other sections of the network already using VMSL prove that the introduction of the technology has not caused any significant incident and VMSL is considered safe and effective, allowing us to rule out the majority of concerns we received in this consultation. The public consultation did not receive substantial opposition to the introduction of VMSL, to raise concerns as to why we should not proceed with it. However the scheme communication plan will be updated to reflect the concerns and criticism of stakeholders about a reported lack of communication.

More responses were in favour of the introduction of the 50 mph speed limit on the westbound carriageway of Gatwick spur from M23 junction 9 to junction 9a than against, and any concerns over safety of the speed limit have been addressed.

If you need help accessing this or any other Highways England information, please call **0300 123 5000** and we will help you.