

M25 J23-27 Twelve Month Evaluation Report

Highways England Explanatory Note

1. Background

- 1.1. Throughout the course of the Examination into the Application by Highways England for the M4 (Junctions 3 to 12) (Smart Motorway) Development Consent Order (the "M4 Scheme"), there have been a number of representations received, which have asked for data and results from the initial monitoring undertaken on the first Smart Motorway All Lane Running ("ALR") scheme on the M25 between Junctions 23 and 27 (the "M25 J23-27 Scheme"). The initial monitoring report from the M25 J23-27 Scheme has now been made publicly available. This Note provides an overview of the output from the M25 J23-27 Scheme following one year of operation. It also outlines how the M25 J23-27 Scheme has performed and considers whether there is any impact from the monitoring that would affect the M4 Scheme.
- 1.2. Whilst the results from the M25 J23-27 Scheme provide an initial indication of the performance of that scheme, there are two key caveats on the extent to which the data can be considered representative of how the Scheme will function:
 - 1.2.1. Only one-year of reporting is available from the M25 J23-27 Scheme. This is a very short timeframe upon which to assess the efficacy of ALR. A larger data set is required before the findings will become statistically significant and confidence can be placed in them. The desirable minimum period for the analysis of collision data is three years; and
 - 1.2.2. The M25 J23-27 Scheme differs from the M4 Scheme in a number of key respects, as follows:
 - 1.2.2.1. For the most part, the M4 Scheme has a lower spacing of signals than the M25 J23-27 Scheme. The average gantry spacing on the M25 is 1004m, compared to a spacing on the M4 of 904m. The most appropriate way to do a fair comparison of the signal visibility between the two schemes is to look at the number of locations where signals are not visible for 600m or greater, which is the requirement within IAN 161/13. The signal visibility within the M4 Scheme is 92% compliant with IAN 161/13, compared to 70% compliance on the M25 J23-27 Scheme. Consequently, the M4 Scheme has better signal visibility than the M25 J23-27 Scheme.

1.2.2.2. The M4 Scheme has a lower average spacing of emergency refuge areas ("ERAs") than the M25 J23-27 Scheme. The average spacing of ERAs on the M4 Scheme is 1853m, whereas the M25 J23-27 Scheme has an average spacing of 2220m, which is almost 400m more than that provided on the M4. This provides generally reduced distances for vehicles to travel in the event that they require a place of safety.

2. M25 Monitoring Results

- 2.1. The section of the M25 that has commenced operation of ALR has been monitored and the report is attached as part of this submission entitled 'M25 J23-27 Twelve Month Evaluation Report' (Rev 2.0, January 2016).
- 2.2. The report presents the results for the 12 months of monitoring and evaluation from May 2014 to April 2015.
- 2.3. The executive summary of the monitoring report provides a summary of the key findings from the initial 12 months of operation.

3. Implications for the M4 Scheme

- 3.1. As can be seen from the M25 J23-27 Scheme's Monitoring output, the M25 J23-27 Scheme is generally performing in line with expectations. The results show that the overall safety performance over the initial 12 month period has not worsened and the initial indications are that the objectives of the M25 J23-27 Scheme are being achieved.
- 3.2. There are some headlines included within the 12 month monitoring output, which Highways England are aware of and work will continue on these areas to improve performance. This includes:
 - 3.2.1. the increase in the number of stops within ERAs on the M25 J23-27 Scheme; and
 - 3.2.2. compliance with the Red X Signal.
- 3.3. With regard to the number of illegal stops in ERAs, Highways England is reviewing the reasons for the increase and will consider driver education programmes across the network.
- 3.4. With regard to the Red X Signal compliance, as explained within the response to the Examining Authority's first written questions (Deadline II - Response to First Written Questions: Section 6 - Traffic Safety – TS6.10), Highways England is currently working on a Red X compliance programme to increase understanding of the levels of non-compliance.

This includes development work on a monitoring tool, which can monitor compliance with the Red X signal across the network. The programme also introduces measures to enhance positive driver behaviour, such as consideration of improvements to the Highway Code and a driver theory test review. Furthermore, education campaigns have been undertaken to improve driver understanding, including media and press coverage, as well as using the message signs on the network to increase awareness of the Red X signal.

- 3.5. On the M4 Scheme, as explained above, there is generally a closer spacing of signals than on the M25 J23-27 Scheme, along with better signal visibility. Further, the M4 Scheme has a lower average spacing of ERAs than the M25 J23-27 Scheme. Consequently, based on the design of the M4 Scheme, and the various categories outlined above in Table 1 below, it can be broadly expected that the performance of the M4 Scheme will be as good as, if not better, than the M25 J23-27 Scheme.
- 3.6. The results from the M25 twelve month evaluation report for air quality suggest that the predicted M4 Scheme air quality outcomes may be pessimistic if the experience on the M25 J23-27 Scheme is replicated during operation of the M4 Scheme. This is because the results for the M25 J23-27 Scheme demonstrate that air quality is generally better in the post-Scheme opening air quality monitoring results compared to the concentrations of NO₂ monitored pre-Scheme. Whereas the air quality predictions for the M4 Scheme generally predicted a deterioration in air quality predominantly as a result of increased traffic flows. However, these improvements in air quality post-scheme opening are, at this stage, not being directly attributed to the M25 J23-27 Scheme. This is due to the difficulty in attributing monitored changes in air quality as being due to the implementation of the scheme, where those effects are small, such as those predicted for the M4 Scheme (i.e. small to medium magnitude changes in air quality), as opposed to being normal year to year variations in air quality.