

**THE PLANNING ACT 2008**

**M4 (JUNCTIONS 3 TO 12) (SMART MOTORWAY) DEVELOPMENT CONSENT ORDER  
APPLICATION**

**TR010019**

**Application by Highways England for an Order Granting Development Consent for the M4  
Junctions 3 to 12 Smart Motorway (Case ref. TR010019)**

**Highways England's Response to Oral Submissions put at Open Floor Hearings**

**16, 19 and 20 November 2015**

## **A. INTRODUCTION**

1. This is the written summary of Highways England Company Limited ("Highways England") of its oral representations made at the Open Floor Hearings ("OFH") held on 16, 19 and 20 November 2015.
2. The OFH were attended by the Examining Authority and Highways England, together with interested parties.
3. The OFH provided a useful forum in which discussions and key issues were raised by the Examining Authority and interested parties. Highways England has listened to and considered the submissions made at the OFH and has prepared this document in response. It is not intended to provide a verbatim report of the OFH. However, this document provides Highways England's response to particular points raised by interested parties and the Examining Authority (particularly where those points have not been directly responded to in documents that it has already submitted). Where applicable, references have been provided where topics were dealt with in previous submissions by Highways England.
4. At the request of the Examining Authority, Highways England held meetings with some interested parties after the OFH in order to provide those parties with more detail, or to answer specific points. These meetings have not been reported in this document.
5. Audio recordings of the OFH have been published and are available on the Planning Inspectorate's website.

## **B. REPRESENTATIONS - OFH 16 November 2015**

### **6. Interested Party 1: Mr Clive Jones, Wokingham Liberal Democrats**

- 6.1 Mr Jones stated that he has requested acoustic fencing and earth bunding to be installed between Junctions 10 and 11 of the M4. He stated that he has made such requests at public information exhibitions and by way of written representation. Mr Jones asserted that noise levels were "quite high" further than 600m from the motorway. He noted that earth bunding and acoustic fencing could be seen as an enhancement to the overall Scheme. Mr Jones claimed that as Highway England's figures for 1985 to 2014 show that traffic growth across whole country is up 2.7 times, the assumption could be made that noise had also increased by 2.7 times.

## Highways England Response

- 6.1.1 Highways England noted that noise mitigation, particularly additional noise barriers, would have landscape and visual impacts.
- 6.1.2 As set out in Chapter 12 of the Environmental Statement (Application Document Reference 6.1), Highways England does not consider - and there is no evidence - that there would be noise increases as a result of the Scheme. The mitigation proposed by Highways England is low noise surfacing across all lanes with additional noise barriers. With that mitigation in place, within the Scheme corridor, there are generally noise reductions (negligible or minor). Within the ES it is recognised that there is an opportunity to enhance the noise climate in the Scheme corridor even though noise is predicted to reduce with the Scheme in operation.
- 6.1.3 Highways England is appraising the potential to implement an enhanced mitigation strategy as part of the Scheme. The enhanced mitigation strategy may replace some existing barriers with higher barriers and may provide additional barriers. Highways England confirmed that the potential to further improve the noise environment at Earley/Lower Earley was being assessed as part of the enhanced mitigation study. The study will assess benefits against cost, and Highways England estimated that the acoustics work will be completed by 11 December 2015.
- 6.1.4 Even on the assumption that the traffic flow increases postulated by Mr Jones was correct, large traffic flow increases lead to relatively small noise increases. Highways England noted that if traffic flow doubles, the resulting noise increase is 3 decibels. On that basis, large traffic flow increases lead to relatively small noise increases. If the 2.7 factor was correct for the increase in traffic, the change would be just over 4 decibels, which would be barely perceptible in the long term.

## **7. Interested Party 2: Mr Bob Barton, Secretary of Cranford Park Friends**

- 7.1 Mr Barton discussed his concerns related to Cranford Park, which he noted was a countryside park, on the inventory of historic green spaces and had numerous grade II and II\* buildings. He repeated his concern in relation to air pollution, and noted that it had been addressed in his written representation. In relation to noise, Mr Barton asserted that there appeared to be a lack of noise barriers proposed.

### Highways England Response

7.1.1 Highways England pointed out that no issues additional to those set out in written representations had been raised orally. A full response had been provided to both the relevant and written representations of the Cranford Park Friends.

## **8. Interested Party 3: Mr Booth, Reading Friends of the Earth**

8.1 Mr Booth noted that at a personal level, he found motorways to be frightening, and liked the comfort of the hard shoulder. In his capacity as a representative of Reading Friends of the Earth, Mr Booth raised concerns with regard to policy options, and suggested that all lane running was more expensive. He stated Friends of the Earth's belief that people should find work closer to home, and his concerns that robots would lead to changed employment patterns. He also noted that the actual monetary cost of carbon was difficult to calculate.

### Highways England Response

8.1.1 Highways England noted that no further issues in addition to those combined in written representations had been raised orally. A full response had been provided to both the relevant and written representations of Reading Friends of the Earth.

8.1.2 In relation to alternatives to all lane running, Highways England considers that the National Policy Statement for National Networks ("NN NPS") sets out clearly that all lane running is the acceptable engineering solution under Government policy.

## **9. Interested Party 4: Dr Cox**

9.1 Dr Margaret Cox contended that the Environmental Noise Directive 2002 meant that the Government had to carry out noise mapping. In 2007, DEFRA produced mapping of Lower Earley, which gives the average of 24 hour noise and does not include wetness of road or wind direction. Dr Cox referred to the World Health Organisation's study of night noise and its effects on sleep in 1999 and 2009. Dr Cox said that the study identified a measurable effect on sleep at 30db, and noted that the 2009 report gives guidelines of 40db with interim target of 55db. Dr Cox noted that the noise map for Lower Earley shows that the whole area is above 50db, some places up to 65db.

### Highways England Response

9.1.1 Highways England noted that Dr Cox's oral representation was related to the current noise climate of the M4 motorway, and the Examining Authority was

referred to Highways England's earlier comment that noise will *reduce* as a result of the Scheme, including at the relevant part of Lower Earley.

9.1.2 Highways England commented that the DEFRA mapping referred to by Dr Cox was part of a three round mapping process, in 2007, 2012 and 2017. The results of round two have just become available and part of these show "important areas", which are areas on the strategic road network identified as having high noise levels. Highways England noted that there are a number of important areas on the M4 between junctions 3 and 12, and confirmed that these were taken into account as recorded in 2012.

9.1.3 Highways England agreed that noise assessments are in the process of moving to a health based approach, and were currently in a transition period. Highways England is required to provide assessment according to DMRB, but in the noise assessments in Chapter 12 of the Environmental Statement (Application Document Reference 6.1), reference was also made to the significant observed adverse effect level (SOAEL) and the lowest observed adverse effect level (LOAEL). Highways England noted that The Noise Policy Statement for England gave definitions of SOAEL and LOAEL, but did not give actual noise levels in decibels. Consequently, those providing assessments are providing values for SOAEL and LOAEL, which are different for different types of development, such as roads, rail and industrial. Although the process is ongoing, there is general consensus as to the values assigned.

9.1.4 Highways England agreed that assessment using DMRB was not Government policy as set out in the NN NPS, but noted that there was no other method approved to assess noise impacts. The Environmental Statement in Chapter 12 assessed the numbers of households above SOAEL levels and the result of the assessment was that the number of households above SOAEL reduce with the Scheme in operation when compared to the situation in 2022 without the Scheme.

## 10. **Interested Party 5: Mr David Green**

10.1 Mr Green noted that he had submitted a written representation which had been answered comprehensively by Highways England, but had not changed his views. Mr Green welcomed the proposals for an enhanced mitigation strategy, but questioned the source of funding for it.

10.2 In terms of noise, Mr Green noted that he had read Highways England's report and he did not "think there is much between us". Mr Green stated that he had read that the effectiveness of

low noise surfacing reduces over 10 years, and described his issue as the spread of traffic/peak hours. He also noted that traffic flows had changed significantly since the 1980s, and suggested that this should form a baseline position.

#### Highways England Response

10.2.1 Highways England confirmed that the baseline year for assessment is the Do Minimum opening year. The approach followed in the assessment of noise impacts of road schemes is that provided in DMRB and Highways England is required to consider the opening year and 15 years after the opening year. On that basis, the assessment needed to address Do Minimum in the opening year, Do Something in the opening year, Do Minimum in the future assessment year, and Do Something in the future assessment year.

10.3 Mr Green mentioned safety concerns, but accepted that his concerns were covered in the written representation of the RAC. In relation to traffic, Mr Green questioned the capacity of the M4 to accommodate a further 18% increase in traffic by 2037, and disagreed with the assessment of the effects of traffic as neutral in the Environmental Statement.

#### Highways England Response

10.3.1 In relation to traffic concerns, Highways England confirmed that the increase in the Do Nothing scenario was based on National Trip End Model ("NTEM") statistics supplied by the Department for Transport. The NTEM forecasts for future trips provides that if nothing was done, there would still be traffic growth as forecasts predict more people, with more jobs, driving more cars. The vast majority of this growth would be reassigned from existing roads.

10.3.2 Chapter 13 of the Environmental Statement provides the basis for Highways England's assessment of a neutral effect on the local road network. The assessment included the consideration of the effects of driver stress on all travellers, and the effects were analysed with the Scheme and without the Scheme, as well as the impact on local roads. Highways England noted that an assessment of the impact on local roads is not a requirement. In any event, the assessed impact of the Scheme is insufficient to move it from one stress level (i.e. high, moderate or low) to another, and therefore the effect is neutral.

10.4 Lastly, Mr Green discussed the responsibility for improvements to the local road network, in particular in relation to the roundabout junctions at 5, 6, 7 and 12.

### Highways England Response

10.4.1 Highways England confirmed that the local road network includes roundabout junctions, as roundabout junctions are operated by local authorities unless they are motorway to motorway interchanges (as in the case of the junctions identified). Highways England confirmed also that the effect on roundabout junctions (including those listed) had been assessed, and the conclusion was that the effect was neutral.

### 11. **Interested Party 6: Mr Richard Tyndall, Thames Valley Berkshire Local Enterprise Partnership**

11.1 Mr Tyndall noted that the Thames Valley Berkshire Local Enterprise Partnership supported the introduction of a smart motorway in its 2014 strategic economic plan, but that support was subject to appropriate mitigation. Mr Tyndall requested reassurance that the Scheme included a contingency sum for post implementation (clarified as a suitable period after the Scheme is operational) works to address unanticipated impacts or unsuccessful mitigation.

### Highways England Response

11.1.1 Highways England has provided a note addressing the provision of contingency money at Paragraph 1.1.1 of Appendix A to these summaries.

### 12. **Interested Party 7: Mr Norman Jorgensen, Earley Town Council and Hillside ward of Wokingham Borough Council**

12.1 Mr Jorgensen reiterated concerns in relation to congestion and the capacity of the local road network and asserted that the noise mitigation proposed was not enough to deliver "reasonable noise levels".

### Highways England Response

12.1.1 Highways England agreed that the motorway was congested, and repeated that the Scheme was assessed as having a beneficial effect on the noise climate.

### 13. **Interested Party 8: Mr Enrico Petrucco**

13.1 Mr Petrucco asked whether the traffic models had been validated with real data from local roads.

### Highways England Response

13.1.1 Highways England confirmed that the traffic model was validated originally using 2009 traffic flows across local roads as well as motorways, and noted that the traffic data used for validation is separate from that input to the model.

13.1.2 In 2013, Highways England obtained traffic count data for that year, and used it to compile a forecast from 2009 to 2013 to confirm that the model continued to be based on accurate data.

## **C. REPRESENTATIONS - OFH 19 November 2015**

### **14. Interested Party 9: Mr Robin Brown, Hayes Community Development Forum**

14.1 Mr Brown stated that local residents want to secure mitigation from construction and operational impacts. He raised particular concerns in relation to the effect on the local road network, but noted that local residents were "greatly encouraged" by Highways England's responses in the Issue Specific Hearings regarding mitigation. Mr Brown noted that the hope was that the 1960s motorway would be enhanced to the standards of a new motorway.

14.2 In relation to noise, Mr Brown said that local residents were not content with the drawings, as the proposed barriers were only west of the St Dunstan subway and Cranford Park and did not include the carriageway to the east. Mr Brown identified Cranford House, St Peter's subway, Roseville Road West to Harlington High Street overbridge as other areas where noise was an issue. However, Mr Brown noted that there was a balance which had to be struck between design and effectiveness due to the conservation area.

14.3 In relation to air quality, Mr Brown discussed the opportunity to reduce potential impacts by adopting a "more innovative approach". He noted that since 2012, TfL has been planting trees and creating tree walls with the aim of collecting pollutants. He stated that local residents thought that offsite planting in conjunction with local stakeholders should be encouraged.

#### Highways England Response

14.3.1 Highways England noted that Mr Brown did not have a specific objection, and that his oral representation could be categorised as a concern in relation to mitigation. Highways England suggested that Mr Brown discussed his concerns directly with Highways England following the OFH.

14.4 In relation to water, Mr Brown expressed disappointment that Highways England was not adopting SuDS measures, and noted that the River Crane was in a poor biological state.

#### Highways England Response



14.4.1 Highways England confirmed that space constraints within the Order limits reduce the practical feasibility of including SuDS features such as ponds and swales. However, Highways England noted that discussions with Buckinghamshire County Council were underway to identify any lands within their ownership that could accommodate SuDS.

14.4.2 Highways England confirmed that, as secured by and set out in the CEMP, measures to protect against pollution of the water environment, including the River Crane, will be put in place during the construction phase of the Scheme. During operation of the Scheme, the drainage design will also ensure no deterioration in the water quality of waterbodies that receive discharges of surface water runoff.

## **15. Interested Party 10: Mr Paul Houghton, Slough Motocross Park**

15.1 Mr Houghton expressed support for the Scheme as it would enable members of the Motocross Park to access the facility faster. However, he noted that the Motocross Park was losing about 30% of its land, which would make it unviable. He asked for a schedule of works to identify when access to the land was likely to be lost.

### Highways England Response

15.1.1 Highways England noted that Mr Houghton's colleague, Mr Morgan had made representations at the Compulsory Acquisition Issue Specific Hearing, and invited Mr Houghton to discuss the schedule of works after the OFH.

15.1.2 In respect of the acquisition of land, at the Compulsory Acquisition Issue Specific Hearing, Highways England explained that Mr Morgan should appoint an agent to negotiate the acquisition of his land interests. Mr Whale on behalf of Highways England noted that the representations had explained that alternative options had been considered that would not require the acquisition of Slough Motocross Park's land, but that for the reasons provided, the Scheme had to be constructed in the form proposed. As such, the criteria for compulsory acquisition in s.122 of the Planning Act 2008 have been met, as is explained in greater detail in the Statement of Reasons (Application Document Reference 4.1, APP-030).

## **D. REPRESENTATIONS - OFH 20 November 2015**

### **16. Interested Party 11: Mr Denis Bodey**

16.1 Mr Bodey asked for clarification on whether the bridge at Maidenhead would be widened.

#### Highways England Response

16.1.1 Highways England confirmed that it will be widening the bridge, as it currently has no hard shoulder which could accommodate a new running lane. Therefore, it would need to be widened in order to allow the space of all lane running.

16.2 Mr Bodey suggested that the Scheme would cause more congestion from junctions 3 to 1 of the M4, and stated that no decision on the Scheme could be made until a decision on a third runway at Heathrow had been made. Mr Bodey asserted that a direct spur from the M4 to the A404(M) would be a benefit to the area.

#### Highways England Response

16.2.1 Highways England noted that the traffic model and the forecasting methodology had been discussed at length through the open floor and issue specific hearings. Highways England highlighted that a range of impacts had been considered from possible developments, and noted that the intention of the Scheme was to reduce congestion (rather than to provide capacity for specific project). The A404(M) was included in the traffic model, and the assessment took account of rising traffic over time. On that basis, it is considered that the Scheme put forward is appropriate and sufficient to accommodate the increased traffic.

16.2.2 In relation to the third runway at Heathrow specifically, Highways England noted that the Davis Commission had only made a recommendation on Heathrow, which was being considered by the Government. Until a decision has been made, Highways England did not consider a third runway at Heathrow to be a firm proposal, and on that basis it had not been taken into account. Highways England noted that a decision would be made on the Scheme before any decision on an application for development consent at Heathrow. Further, even if Heathrow were selected as the location for a new runway, there remained a very long planning process before any construction could occur.

## **17. Interested Party 12: Mr Graham Easton**

- 17.1 Mr Easton raised concerns in relation to noise for local residents at Dorney, asserting that more traffic or more lanes would mean more noise, pollution and vibration. He asked whether the deterioration of low noise surfacing had been taken into account in the noise assessment, and explained that he did not consider that national models and the use of national ratios could be applied equally.
- 17.2 Mr Easton noted that it was intended to carry out continual noise monitoring at the school. The Examining Authority asked Mr Easton to agree methodology and equipment with Highways England.
- 17.3 In terms of mitigation, Mr Easton requested higher barriers across the whole of the relevant length of the Scheme, including at the bridge. He suggested that higher barriers were needed due to the camber of the M4 in the area, which meant that the far carriageway was 1m higher than the near carriageway, which meant that noise was reflected.
- 17.4 Mr Easton highlighted vibration and noise from the Thames Bridge, and noted that he was not aware of any monitoring. He requested an assessment of vibration at Thames Bray Bridge, particularly during the rush hour.

### Highways England Response

- 17.4.1 On noise assessment, Highways England is required to base the assessment on calculations not measurement, as future noise levels cannot be measured, with or without Scheme. The measurements taken at various locations along the motorway were used to confirm the accuracy of the modelling. The method used by Highways England for the calculations is the methodology provided in Calculation of Road Traffic Noise ("CRTN"). CRTN requires a 3 hour measurement period for the shortened measurement procedure.
- 17.4.2 With regard to potential deterioration of low noise surfacing, Highways England accepts that all road surfaces deteriorate over time. However, the correction for low noise surfacing employed in the calculations takes deterioration into account, and calculates an average over the life of the surface. As a result, the performance at Scheme opening is likely to be better than predicted.
- 17.4.3 The time period for calculations is based on the period from 6am until midnight, as required in CRTN. To mitigate the effects of the Scheme, there are no additional barriers proposed at Dorney nor any replacement barriers. However,

with the Scheme in operation, Highways England predicts noise decreases in both the short term and in the long term.

17.4.4 In response to the issues raised concerning the camber of the M4, Highways England confirmed that the models included detailed ground elevation data, which takes account in changes in height of the motorway and surrounding area. Additionally, the acoustic barrier which had been modelled at 2m, has been modelled at 1.8m, and the changes to the assessment were negligible.

17.4.5 Further, Highways England confirmed that Dorney is an area where it is considering enhanced mitigation, which may take the form of additional noise barriers or higher, replacement noise barriers. The results of the enhanced mitigation study will be published on the Planning Inspectorate website in due course. It is not guaranteed that any area would get additional barriers or higher, replacement barriers.

17.5 In relation to air quality, Mr Easton accepted that cars would hopefully become cleaner, traffic flows would be better controlled and that there had been continuous modelling in the AQMA, but suggested that more innovative ways of screening the motorway and absorbing air pollution should be considered. More specifically, Mr Easton asked if there had been work combining noise barriers with pollution absorbency.

#### Highways England Response

17.5.1 Highways England noted that Mr Easton's concerns related to mitigation, and that Mr Easton had had dialogue with Highways England in that regard.

17.5.2 Highways England confirmed that a trial had been carried out a few years ago combining noise barriers with titanium oxide, and the results were not helpful. Highways England is currently conducting a trial of potential air quality barriers on the M62, but results are not due until Autumn 2016. This is addressed further at paragraph 3.11 of Appendix A to the written summary of the Issue Specific Hearing relating to the Environment.

### **18. Interested Party 13: Mr James Hakesley**

18.1 Mr Hakesley said that he was resident at Amerden Caravan Park and ran a business from it. He was concerned about the impact of the construction works on his personal life and business, and wanted to comment in relation to noise and visual impact. In particular, Mr

Hakesley was interested in the plans to reinstate vegetation, planned night time works, and design details for the acoustic barriers.

#### Highways England Response

18.1.1 Highways England noted that Mr Hakesley's parents had made a similar representation at the Compulsory Acquisition Issue Specific Hearing, and did not repeat its response on that occasion. Highways England's written summary of its response to Mr and Mrs Hakesley is at paragraphs 8.1 to 8.6 of the Written Summary of the Compulsory Acquisition Issue Specific Hearing. It was suggested that Mr Hakesley should discuss his particular concerns with Highways England following the OFH.

18.1.2 In relation to night time working, Highways England stated that generally the only night works required in an area was when additional traffic management lane closures were required to restrict flows on M4.

18.1.3 Highways England proposes to and will require that its contractor maintains 3 lanes of traffic in each direction on the M4 during peak times, so when work operations require any further restriction of traffic to provide sufficient working space for the work to be carried out safely, then the work has to be carried out at night. This would include, for example, any gantry erections in the area near the caravan park or the lifting in of the bridge beams. Highways England does not envisage extensive night time works in the area of Amerden Caravan Park. The Construction Environmental Management Plan sets out in section 4 how Highways England will engage with local communities and business in order to let them know how and when works will be carried out.

### **19. Interested Party 14: Mr Michael Clyde**

19.1 Mr Clyde asked what the distance criteria for the noise study area was. He also asked for more details in relation to acoustic barriers - in terms of measuring them, their heights and types of barriers.

#### Highways England Response

19.1.1 Highways England explained that the required buffer is to every residential property within 600m of the Scheme. Every non-residential, sensitive receptor within that buffer is also accounted for in the calculation. The calculation method used (CRTN) becomes less accurate at greater distances than 600m, and

Highways England considered that the 600m buffer identifies the noise issues of the Scheme more than adequately.

- 19.1.2 Highways England noted that there are various criteria for different barriers. All the barriers used on a motorway project are of a standard such that the noise going through the noise barriers would result in an effect that is negligible. In short, the barriers are extremely robust. On heights of barriers, there are a range of heights from 2.5m to 4m being considered as part of the enhanced mitigation study. Barriers over 4m have not been considered, as at that height consideration has to be given to the foundations of the barrier, and engineering and visual impacts may become more significant.
- 19.1.3 Highways England confirmed that the standard for noise attenuation from acoustic barriers had not changed significantly since the M4 was built, and noted that the lifetime of barriers was up to 40 years with regular maintenance. In noise terms, the material used does not matter so much as the ability of the material to perform in acoustic terms. Barriers on Highways England schemes tend to be reflective barriers, and this reflection is accounted for in the noise model.
- 19.1.4 Addressing a point raised by the Examining Authority as to whether the standard of current barriers of the M4 had been correctly identified, Highways England stated that during the construction of the Scheme, any existing acoustic barriers not fit for purpose would be replaced. This means that any barriers which turn out not to be acoustic barriers will be replaced. Existing barriers appear in both the Do Minimum and Do Something analysis. Consequently, given Highways England commitments at the hearings, the actual beneficial noise changes resulting from the operation of the Scheme will be an improvement on those reported in the Environmental Statement.