GARY COWAN

WRITTEN REPRESENTATION

HIGHWAYS ENGLAND'S RESPONSE

1.1 My initial comments remain but I would like to add some additional points which I would like the Inspector to consider. They are as follows. The M4 Motorway was constructed a very long time ago and it would not meet the modern criteria for motorway construction if applied today.

Highways England Comment

1.1.1 Highways England agrees that much of the M4 between junctions 3 and 12 was built in the 1960s and 1970s and it is accepted that different criteria regarding some aspects of the motorway's design may well apply. However, the design of the M4 Junctions 3 to 12 Smart Motorway scheme (the "Scheme") was undertaken in accordance with all the relevant current standards for provision of a smart motorway.

1.2 The environmental impact on residents is a key consideration and need to be considered along with my previous comments which state that the additional traffic generated noise and increased air pollution levels need to be addressed initially with a low noise surface, air quality monitoring and ideally a low emission zone so keeping vehicles that lead to increased pollution are not permitted on the motorway.

Highways England Comment

1.2.1 Highways England confirm that, as detailed in paragraph 12.2.49 of Chapter 12 of the ES (Application Document Reference 6-1, APP-152) and secured in Requirement 5 at Schedule 2 to the draft Development Consent Order ("DCO") (REP3-005), the complete Scheme extent will be surfaced across all lanes with "low noise surfacing". Additional noise mitigation has also been incorporated into the Scheme design at identified locations through the provision of additional noise barriers or the replacement of existing barriers (as detailed on figure 12.2 of Application Document Reference 6.2, APP-257 to APP-260 inclusive).

1.2.2 With the above mitigation in place, and as reported in Chapter 12 of the Environmental Statement ("ES") (Application Document Reference 6-1, APP-152), the magnitude of impact of the Scheme on ambient noise is minor beneficial in the short term and negligible in the long term. The vast majority of the Scheme corridor will experience a negligible or minor reduction in noise levels with the Scheme in operation.

1.2.3 Furthermore, an enhanced noise mitigation study has been undertaken. This quantitative assessment is based on a detailed cost/benefit analysis, the outcome of which has determined whether additional barriers (or replacement barriers) should be provided to specific areas along the Scheme. The results of the enhanced noise mitigation study have been provided at Deadline V.

1.2.4 The Scheme is not predicted to result in a significant air quality effect nor affect the UK's reported ability to comply with the Air Quality Directive. The air quality assessment for the Scheme is provided in Chapter 6 of the ES (Application Document Reference 6-1, APP-152). Potential increases in traffic along the motorway network, including the Scheme route, have been assessed. The overall operational assessment of significance of the Scheme is set out in paragraph 6.15.16 and Tables 6.21 and 6.22 of Chapter 6 of the ES.

1.2.5 Highways England has developed a National Air Quality Monitoring Strategy and in the future is rolling out a National Air Quality Monitoring Network ("NAQMN"). It is expected that the M4 will be included in the monitoring network. It should be noted that a low emission zone is not being considered, as significant air quality effects are not predicted to result from the Scheme.

1.3 Noise can be affected by wind direction, funnel effect, rebounding and echo and for this reason barriers must extend along both sides of the motorway to minimise this as if not the noise depending on environmental conditions that would protect some residents will be doing so at the expense of others.

Highways England Comment

1.3.1 The method employed for noise calculations is that provided in the Calculation of Road Traffic Noise ("CRTN"), as required by paragraph 5.191 of the National Policy Statement for National Networks ("NNNPS"), which is the standard method employed in the UK for the calculation of noise from road traffic (see Chapter 12 of the Environmental Statement (ES), Application Document Reference 6-1, paragraphs 12.2.12 to 12.2.15). Whilst this method requires no allowance for any funnelling effect, it employs a reasonable worst case, and assumes that a moderate wind is blowing from each segment of the motorway to any receptor, wherever that receptor may be in relation to the motorway.

1.3.2 The noise assessment, as reported in Chapter 12 of the ES (Application Document Reference 6-1, APP-152), assumes that all barriers are reflective to provide a worst case assessment. Even taking this into account, as reported in the ES, the magnitude of impact for the Scheme is assessed as minor beneficial in the short term and negligible in the long term. The vast majority of the Scheme corridor is expected to experience negligible or minor reductions in noise levels with the Scheme in operation.

1.3.3 However, it is also noted in paragraph 12.4.112 of the ES (Application Document Reference 6-1, APP-152) that there is the potential to improve further the noise climate within the Scheme corridor. A qualitative appraisal of an enhanced noise mitigation study to achieve this is provided in Appendix 12.5 of the ES (Application Document Reference 6-3, APP-351). As stated above in the response to paragraph 1.2, this enhanced noise mitigation study comprises the possible provision of additional noise barriers and the possible replacement of some existing noise barriers with higher noise barriers. The results of the enhanced noise mitigation study have been provided at Deadline V.

1.3.4 Highways England understands the concerns regarding reflected noise and confirms that the effects of noise reflections from new barriers have been taken into account. In the assessment reported in the ES (Application Document Reference 6-1, APP-152), all noise barriers were assumed to be reflective, thus

providing a worst case assessment. Highways England can confirm that any of the new barriers provided on the eastbound carriageway between J10 and 11 as a result of the enhanced mitigation assessment will be high performance absorptive barriers. This will ensure that residents of Arborfield and Newland Parish are not exposed to elevated noise levels as a result of reflected noise from newly installed noise barriers.

1.4 In addition bunds and tree planting along with noise barriers which are very common practices on continental motorways should be considered as well as noise barriers as they have the added advantage of muffling noise and significantly reducing pollution while providing some respite for local wildlife. Where at all possible a combination of all these along with a low noise surface must be the best environmental option available.

Highways England Comment

1.4.1 During the hearings, Highways England specifically addressed the question of the use of earth bunds for noise mitigation, noting the reasons for not providing them as:

1.4.1.1 In acoustic terms, an earth bund can act as a noise barrier. However, given that its peak is further away from the motorway than a vertical noise barrier, it is not as effective as a noise barrier.

1.4.1.2 The land-take required for the footprint of an earth bund is far greater than a vertical noise barrier, which means the locations where an earth bund could be located within the Order limits are limited.

1.4.1.3 In construction terms, an extended construction period is required for earth bunds, which causes disruption for an increased duration and impacts on the construction cost. Other construction issues may also arise, depending on the location of the earth bund, such as access to the construction site or removal of vegetation.

1.4.2 A substantial band of trees is required to provide any significant noise attenuation. Highways England considers that the proposed noise mitigation strategy, comprising low noise surfacing, additional noise barriers and the retention or replacement of existing noise barriers is the most effective way to mitigate noise levels within the Scheme corridor.

1.5 I note and support the comments from representations numbers 2, 47 and 56 which raise very similar concerns to me mainly centering on the most important need to protect existing residents from the environmental impacts the Smart Motorway will bring.

Highways England Comment

1.5.1 Highways England provided a full response to written representation numbers 2 (Dr Normal Jorgensen), 47 (Tim Holton) and 56 (Arborfield and Newland Parish Council) at Deadline I (REP1-003). It is noted that these parties have made further representations at Deadline IV to which Highways England is also providing individual responses.

1.6 To that I would add those of the Mid West Berkshire Local Access Forum (representation number 209) which are very comprehensive and I would ask the inspector to take them into consideration.

1.6.1 Highways England provided a full response to the representation from Mid-West Berkshire Local Access Forum (representation 209) at Deadline I (REP1-003). It is noted that Mid-West Berkshire Local Access Forum has made a further representation at Deadline IV to which Highways England is also providing a response.

Highways England Comment

1.7 For the record my previous comments were "The motorway must use low noise surfaces and have proper noise suppression barriers along both sides of the section in question. Increased traffic will increase noise levels to which all residents must be protected against. In addition air quality monitors must be in place to guard against rises in pollution as a direct result of increased traffic plus consideration given to establishing a low emission zone".

Highways England Comment

1.7.1 Highways England considers that these points are addressed in the responses to paragraphs 1.2 and 1.3 above.