



Public Health
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The Planning Inspectorate
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FAO:- James Bunten

Your Ref: TR010019

Our Ref:

26 November 2015

Dear Sir(s),

**Nationally Significant Infrastructure Project
M4 Junctions 3 to 12 Smart Motorway – TR010019
Deadline IV: Submission of documentation following subject specific hearing
(Environment) on 17th November 2015**

Thank you for inviting Public Health England (PHE) to the subject specific hearing on 17th November. PHE's role is to assess proposed nationally significant infrastructure developments to ensure that they do not have a significant detrimental impact on public health. When assessing such schemes PHE is supportive of any environmental improvements benefiting public health, including improvements in local air quality.

As stated at the meeting, PHE has previously maintained a position that the proposer had followed UK guidance and good practice in undertaking an Environmental Impact Assessment and assessing the significance of impact on sensitive receptors. On this basis PHE had raised no objection to the scheme as proposed.

During the hearing, a number of questions were raised by other parties regarding the traffic modelling process. This included the identification of other schemes that were scoped out or excluded from the assessment of cumulative impacts and the possible need for local junction modelling to fully inform the traffic model. This position is further complicated by discussions that took place with regard to the 'worst case' assumptions regarding future emissions from the vehicle fleet, based on Euro 6 emissions standards. PHE noted that some parties were of the opinion that the figures used in the modelling were not suitably precautionary and that this would under-estimate the impact on nearby populations.

During the meeting PHE was asked to provide additional information relating to the health impact of small increases in exposure to Nitrogen Dioxide (NO₂), and to advise if the Health Impact Assessment that was submitted at deadline III would

need revision in light of the uncertainties identified in the traffic and air quality modelling.

In responding to these questions PHE is still satisfied that the proposer has followed current UK guidance and good practice. However, in light of the issues raised at the hearing with regard to the traffic and air quality modelling PHE will address the following questions:-

- 1) *Can a small increase in exposure to nitrogen dioxide (NO₂) have a measurable or quantifiable impact on human health? This question is in the context of a person or persons who currently either reside in a location which exceeds the Air Quality Standards (AQS) for NO₂ or is marginally below the threshold of exceedance.*

The quantification of health impacts of NO₂ is currently being considered by the Committee on the Medical Effects of Air Pollutants (COMEAP).

The current advice suggests a likely impact on mortality associated with increases in long-term average concentrations of NO₂, with the increase in risk depending upon the increase in concentration. However, the confidence in this increased risk would depend upon whether the proposed changes in traffic management would result in higher concentrations of NO₂ alone, or would also result in increases in exposure to other co-varying traffic-related pollutants (e.g. ultrafine particles, black carbon, VOCs etc.) more generally. If increases in pollutant concentrations are likely to be relatively short-lived (e.g. a few years) then the increases in mortality risk would be less than if they were permanent (e.g. resulting in higher exposures for many years or a lifetime).

Nonetheless, the Air Quality Standards were designed to be protective of health and this, in conjunction with the recent advice from COMEAP, leads PHE to the conclusion that any increase in exposure to NO₂ in locations where the standards are currently exceeded, or where a predicted increase in exposure would result in a new exceedance, should be viewed as undesirable and avoided if practicable.

Whilst the exact health impact of a small increase may not be quantifiable PHE would recommend that the Planning Inspector gives consideration to the need to ensure that the local overall air quality is not worsened. PHE would encourage the planning Inspector to consider, if practicable and cost effective, opportunities to secure improvements in local air quality related to this development, particularly in areas currently exceeding the air quality standards and designated as Air Quality Management Areas.

PHE notes the request made at the hearing, by one of the other interested parties, that the proposer should be required to provide fixed air quality monitoring sites, operating for a number of years after the scheme comes into operation. PHE would support the principle of this long term monitoring as it would allow the assessment of actual air quality impacts arising from the

scheme on sensitive receptors, allow the validation of the modelling methodology and provide valuable baseline data that could be used in the assessment of potential air quality impacts from similar road schemes in the future.

- 2) *A Health Impact Assessment has been submitted by the applicant at Deadline III. Table 22 states that a minor negative impact for air quality is expected in the operational phase and that no mitigation is recommended. In the light of uncertainties in traffic forecasting and air quality does the applicant consider that this should be reviewed? Can the LPAs and statutory authorities, in particular Public Health England (PHE), give their considered opinions?*

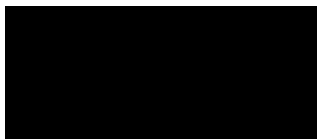
As stated at the hearing, PHE initially reviewed the Health Impact Assessment in the context that the traffic and air quality modelling was considered to be satisfactory and sufficient, based on UK guidance and good practice.

During the hearing, a number of parties voiced concerns regarding the scope and extent of the traffic modelling used in the assessment. PHE was not directly involved in this debate but would advise that should the traffic model be amended or altered there is likely to be a subsequent impact on the air quality modelling process, and thus, on the original conclusions drawn about the air quality impacts..

PHE can confirm that should the Planning Inspector agree that supplementary traffic modelling is required, and/or that the vehicle emissions assumptions should be reviewed, there would then be a need to update the air quality modelling and subsequently review the Health Impact Assessment in the light of the new model predictions.

We hope that the above is useful but should you require any clarification please do not hesitate to contact us.

Yours faithfully



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Please mark any correspondence for the attention of National Infrastructure Planning Administration.