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Mr David Reed BSC DipTP DMS MRTTP
c/o Ian Kemp
Programme Officer Vale of White Horse Local Plan Part 2
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(via Email: jdkemp@icloud.com)

Dear Sir,

Re: Examination Matter 04, document HEAR04.5 'Cumulative Impact of Air Quality' – comments on behalf of Fyfield and Tubney Parish Council and FLAG

Since the Examination session on 24 July the VoWHDC has sent you the above note (dated 22 August) in which it is claimed that the cumulative impact on the air quality in the Marcham AQMA due to traffic from proposed developments, in particular East of Kingston Bagpuize, is negligible. The note was based on a report prepared by RPS consultants which is attached as an appendix to the VoWHDC note, HEAR04.5.

You will recall that during that session we presented evidence that there would be a substantial, if not severe, increase in air pollution in Marcham due to the traffic from committed and proposed developments in the Fyfield and Kingston Bagpuize (KBS) area. To be specific, the daily traffic flow through the Marcham AQMA was expected to increase by 44 percent by 2026, mainly consisting of *circa* 2500 private vehicles per day.

Since 46 percent of the air pollutants in Marcham are attributable to private vehicles¹ the 44 percent increase in traffic would lead to an average increase of 20 percent (0.44×0.46). (Note that the figure of 44 percent does not include traffic from other developments such as Dalton Barracks.)

The tables, specifically Table 1.3, in the RPS consultants' report for VoWHDC show predicted increases in the major NO₂ pollutant of between 3.5 and 11.7 percent, depending on location, and an *average* increase of 6.1 percent. These figures were derived by scaling the results of a model of the pollution from the proposed development in South East Marcham upwards (according to relative traffic flows) by a factor of 41.

There is a discrepancy of *a factor of more than three* between the results of the RPS study for VoWHDC (6.1 percent on average) and our simple, but rugged, arithmetic (20 percent average).

¹ NCA01, Air Quality Action Plan, Vale of White Horse District Council, 2015, in the Examination Library

Part of the reason for this discrepancy is because the report by RPS uses a traffic flow of 1548 vehicles per day through Marcham, which is too low. Specifically it does *not* include:

1. The expected 'natural' growth of traffic (approximately 2 percent per year), and
2. The additional traffic due to the already committed developments in the Fyfield-KBS area.

Inclusion of these two contributions would certainly increase the predictions of the RPS model by a factor of between 1.7 and 2.

The origin of the remaining difference (also a factor of 1.7 to 2) is obscure. It may be attributable to scaling small numbers upwards (by 41 times) which is unsound methodology; we are unable to tell.

We note also that:

1. Table 1 of Appendix 2 of the RPS report gives actual (measured) air quality data and shows that in recent years some areas of the Marcham AQMA have already exceeded the Air Quality Assessment Level of 40 micrograms per cubic metre by as much as 30 percent;
2. Table 1.3 of the body of the RPS report gives the predictions of the model used by RPS. A comparison with the measurements given in Table 1 of Appendix 2 of the same report shows that the predictions of the RPS model underestimate the measured values by the order of 25 to 30 percent, and
3. The conclusion that the increase in traffic through Marcham will have a negligible effect on air quality is based on the lower *model* values rather than the actual values of average concentrations. Use of the higher measured values would lead to a different conclusion².

We conclude that given:

1. the large discrepancy between the RPS estimates and our (frankly) common sense estimates of additional pollution, and
2. the use by RPS of the (lower) model average concentrations, rather than the measured concentrations, to assess the impact,

the assertion made by VoWHDC that the additional traffic due to the proposed developments will have a negligible impact on the air quality in Marcham is unsound and should be regarded with the utmost scepticism.

Yours faithfully,

Prof. John Cobb,

on behalf of Fyfield and Tubney Parish Council and FLAG

² This can be seen by studying Table 1.1 of the RPS report: a given absolute change in concentration of a pollutant has a greater impact for a greater long term average concentration of the pollutant.